

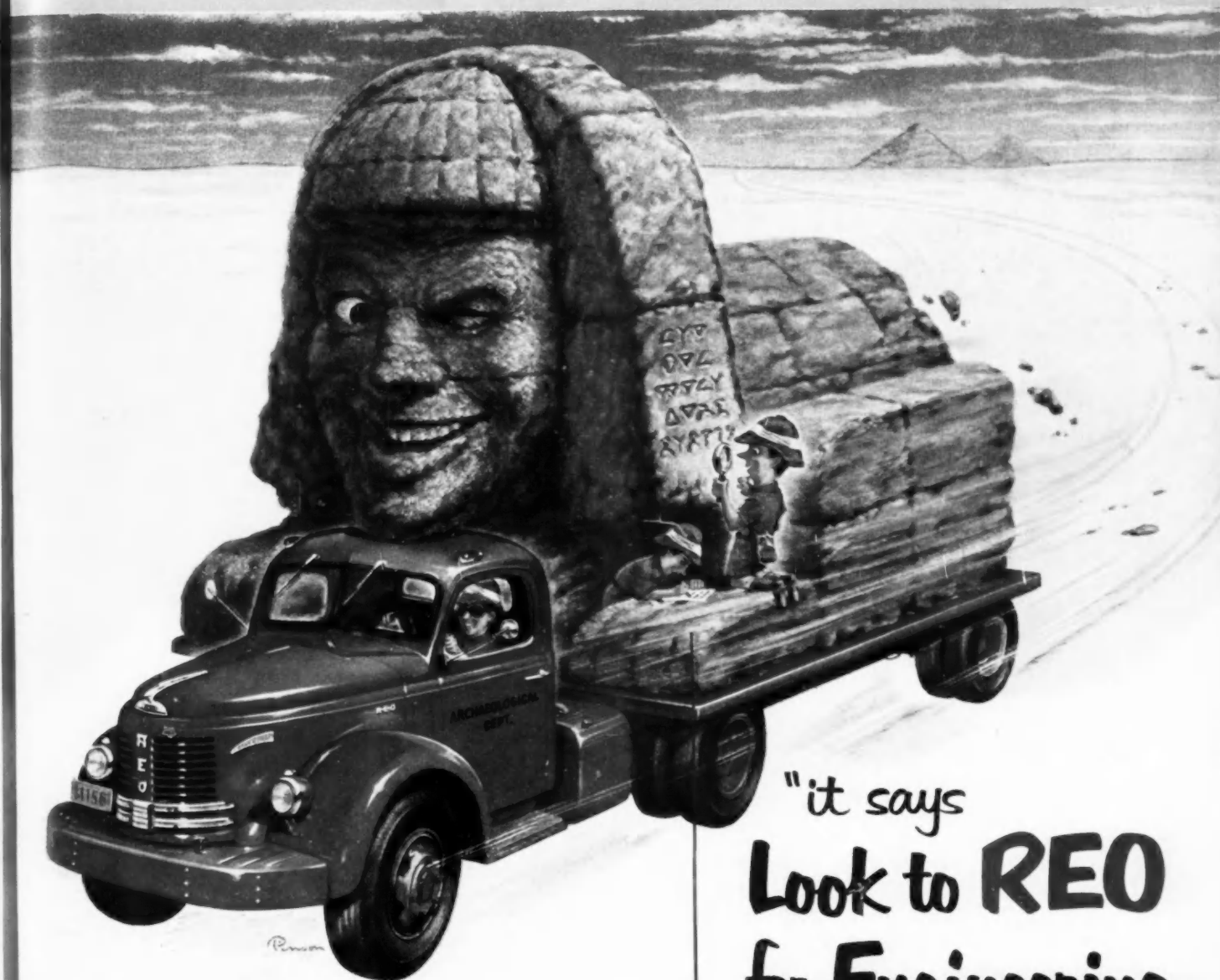
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COMMERCIAL CAR JOURNAL

THE MAGAZINE FOR TRUCK AND BUS FLEET OPERATORS



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COMMERCIAL CAR JOURNAL, March, 1952



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READER DIGEST

An Independent Analysis of the Md. Road Test

In lieu of final official reports on the Maryland Road Test, CCJ has taken the issue in hand in a move to see that unbiased and complete information is available to the reader. This special independent report covering the findings of W. S. Housel, professor of civil engineering of the University of Michigan, brings to light some pertinent data that has not been published heretofore. See page 67 before you draw conclusions—or permit others to make use of incomplete information.

Tailored Maintenance Slices Bakery's Costs

Alstadt and Langlas Bakery develops a streamlined but carefully tailored PM system that has cut use of printed forms by one third; reduced record keeping cost by as much, without reducing its efficiency; and has correspondingly reduced maintenance. Tailored PM does the trick. See page 64.

Bus School Entices Greyhound Drivers

The school goes to the bus at Greyhound in Chicago—and every company driver sits on the side lines at the old bus school, listens to lecture-demonstrations on a series of subjects from use of shutters to how to fix the fuel pump. Results—better drivers, fewer road calls from disabled buses and improved driver vehicle reports. See page 56.

Pallet Loading Speeds Dairy's Deliveries

Palletized handling of dairy products was something of an experiment until Supplee-Wills-Jones Milk Co. of Philadelphia tackled it in a big way. This dairy coordinated all factors related to the delivery of its products—cases, pallets, loading platform truck bodies, and so on. The outcome was fast loading, reduction in platform personnel, reduction in breakage. See page 52.

Parts Salvage Saves up to 90%

Displays of reclaimed bus parts exhibited at the regional maintenance meetings of the American Transit Assn. in Atlanta and Galveston prove that bus men (and fleetmen too) can save money by rebuilding worn assemblies. One operator rebuilt 2136 units over a 30-day period, at a labor cost of \$4,459.12. New, these same units would have cost \$72,048.96. See page 62.

Death of a Wheel Bearing

When wheel bearings fail, there's usually a pretty good reason. That may be a result of moisture, mixing or greases, foreign agents, improper handling and storage, careless maintenance practices. Review this story in the interest of improving your wheel bearing mileages. Page 60.

If You Ever



Have A Bull by the Horns
DUE TO COOLING SYSTEM CORROSION

Remember

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SAND-BANUM SPECIAL

Pure Concentrated Colloidal Tablets



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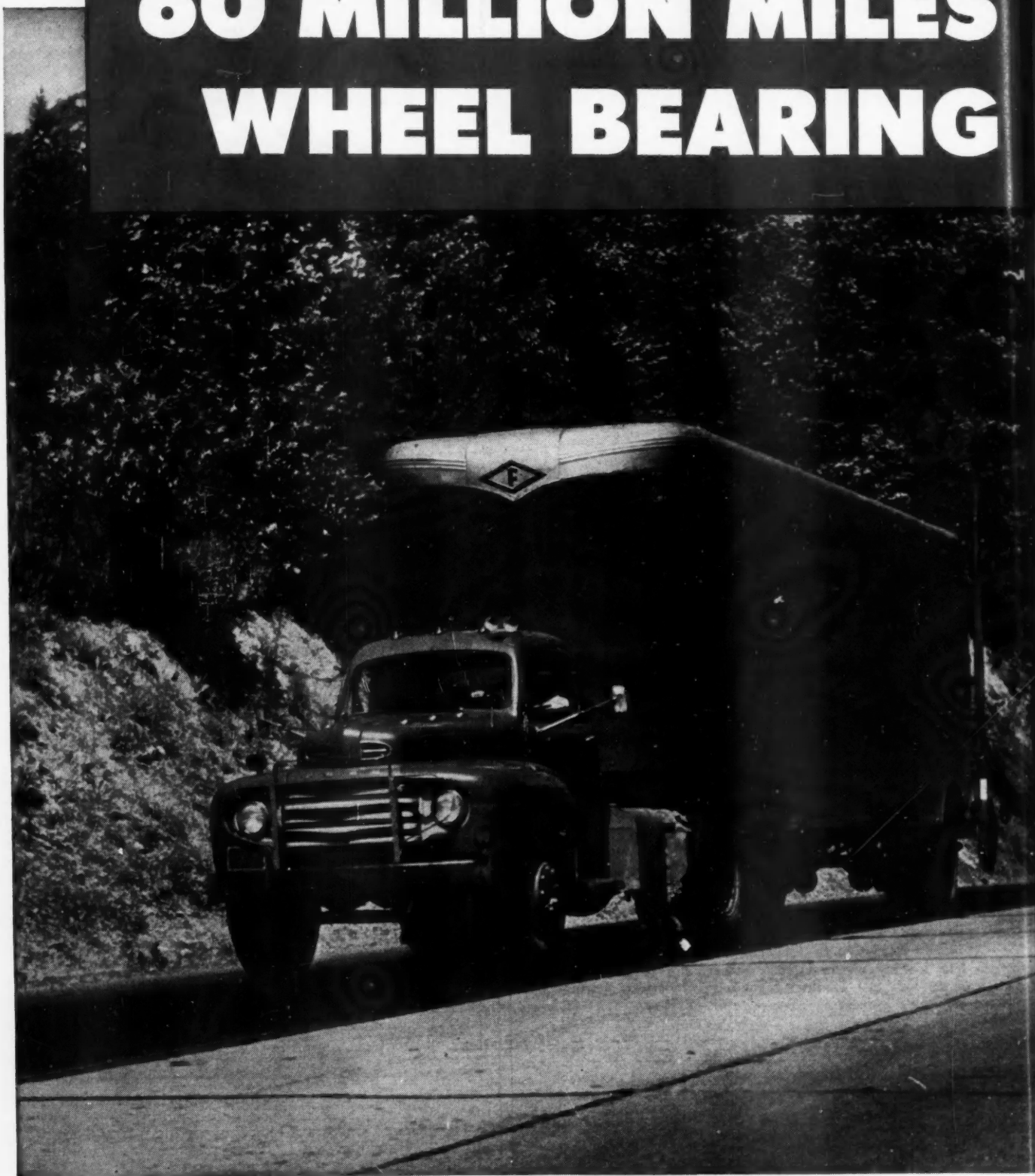
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S G WITHOUT A FAILURE . . .

Fleet lubricated with TEXACO MARFAK HEAVY DUTY

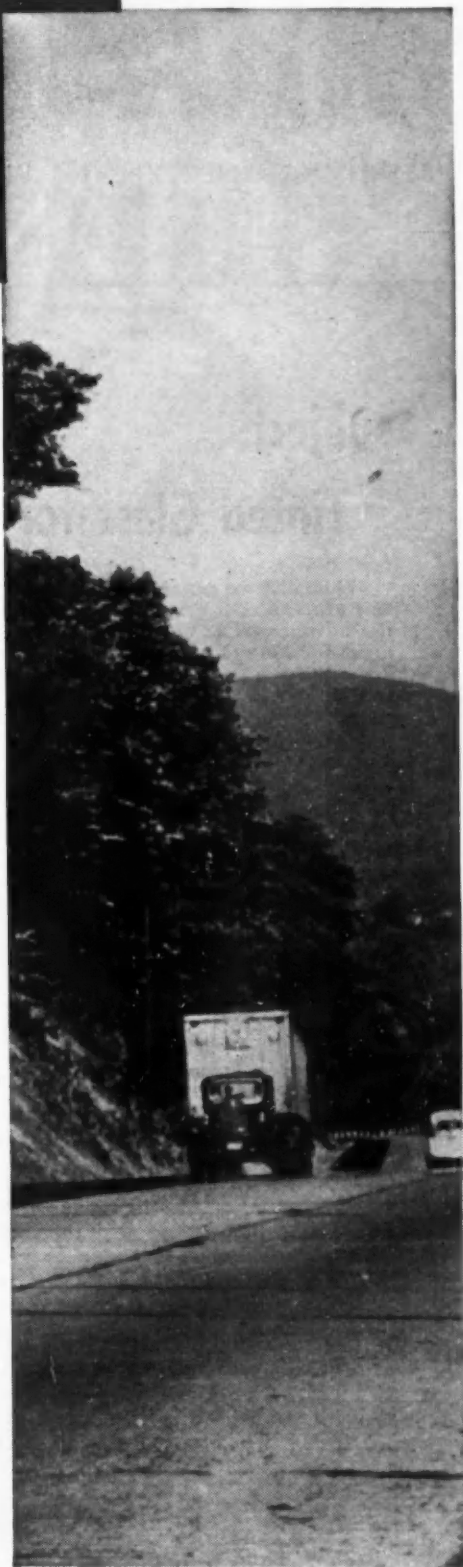
OVER the past four years, one of the country's leading fleet operations has put the impressive total of 60 million miles on the wheel bearings of its trucks. In that time, with *Texaco Marfak Heavy Duty* on the job, there has not been a single bearing failure.

Service is often very tough, but *Texaco Marfak Heavy Duty* has the stamina to meet it. Dirt and road splash have no effect. Bearings are still in perfect condition. *Texaco Marfak Heavy Duty* is credited not only with keeping maintenance costs low, but also with keeping these trucks on the road and out of the repair shop.

Use *Texaco Marfak Heavy Duty* in your wheel bearings and get comparable results. No seasonal change is required. And in chassis bearings, use *Texaco Marfak*. You'll find it lasts longer, gives extra hundreds of miles of protection against rust and wear. *More than 400 million pounds of Texaco Marfak have been sold!*

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CONFERENCE C O R N E R

PRESENTING THE EXPERTS' VIEWPOINTS ON TIMELY SUBJECTS OF INTEREST TO FLEETS

Subject:

Tinted Glass for Trucks?

When can we expect this new type glass for trucks? Manufacturers are not ready to say. They point to the advantages as outlined below, and emphasize the need for tinted glass in truck cabs. Buses already have tried out this type windshield with excellent results. When and if the industry is ready to demand tinted glass, it is available. The slight extra price will be offset by the improved safety, driver comfort and employee morale.

The development of E-Z-Eye Safety Plate Glass by Libbey-Owens-Ford Glass Co. to provide glazing which would reduce glare and heat but keep a high standard of light transmission is one of the romantic stories of glass technology.

Most glass has had a green tinge due to the iron oxides presence in sand used in primitive glass manufacture. Remember, the green glass bottles, used for bottling certain types of beverages?

There are two types of iron oxides used in glass-making—ferrous, FeO , and ferric, Fe_2O_3 . Green bottles sometimes have an iron content of 1/10th of one per cent. But in color clear plate the iron oxide is reduced to a negligible amount.

Glass containing a high content of ferrous oxide absorbs the light waves near the infra-red end of the spectrum so its presence reduces heat transmission without cutting light transmission. Glass with a high content of ferric oxide was found to absorb the light in the ultra-violet area. And in the experimental development of sunglasses and welding goggles it was found that a proper balance of the two oxides would produce a glass which would absorb both light and heat rays not desirable for comfortable vision.

One of the important problems in producing this type of glass was to preserve the optical qualities of the glass, to give the maximum possible light transmission for clear vision at all ranges of light conditions from bright sun to darkness of night, while at the same time reducing the input of the heat and glare rays of sun and glare from artificial lights.

The radiometer—a sealed bulb containing vanes which rotate when exposed to radiation of the sun, or an artificial light source to represent the sun—is a means for showing the transmission of radiated energy through glass. The speed of the vanes shows the in-

tensity of radiation. Scientists, of course, use more accurate methods to measure radiation but the radiometer gives a visual demonstration of how a heat-absorbing glass excludes an important percentage of heat and glare-producing rays.

On the tests for E-Z-Eye Safety Plate Glass it was found that only 49 per cent of total radiation of sunlight is transmitted through this new glass while conventional safety plate glass transmits about 81 per cent of total sun radiation. Thus the radiometer vanes were found to run about twice as rapidly for ordinary plate glass as for the new type. The new E-Z-Eye glass transmits an average of 75 per cent of "illuminant C" which is average daylight, according to routine tests.

Measurements have shown that E-Z-Eye admits only about 46 per cent of ultra-violet in sunlight as compared with a transmission of 69 per cent of ultra-violet light by regular plate glass. The E-Z-Eye does its best job of barring out undesirable rays when it keeps out 69 per cent of infra-red as against plate glass which only bars out 24 per cent.

The soft, eye-resting bluish-green tone which may be compared with the better grade of sunglasses is restful to the eyes. Eye fatigue is difficult to measure but bus drivers who have covered thousands of miles of all types of highways in all kinds of light conditions invariably demand the heat-absorbing type of windshield for their buses, especially when there is a replacement job at hand.

This glass retains all the optical properties of high quality plate glass. It goes through the same processes in casting, grinding and polishing, cutting, bending and laminating as does other plate glass in manufacture into safety glass.

Driving comfort and safety have been improved by another tinted glass product, Solex Duplate Safety Glass developed by Pittsburgh Plate Glass Co.

Solex admits 72 per cent to 74 per cent of daylight. In fact, at twilight, the peak accident period, eye sensitivity shifts to a point near the blue end of the spectrum where the transmission of Solex is higher than for daylight. At night the Solex windshield provides exceptional advantages because of its unique ability to reduce night blindness by decreasing glare of approaching headlights and other extraneous night lights, and at the same time providing clear vision for the driver.

SPORT SPARK PLUGS

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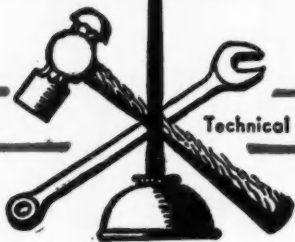
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COST
PER MILE**
of spark plug
operation

You're Always Right With Auto-Lite

At Your Service

By M. K. SIMKINS

Technical Editor, Commercial Car Journal



Resistance in High Tension Wires

Signs of chafing, cracking, dryness or even stiffness of the high tension cables in the electrical system indicate that you are probably losing some efficiency due to leakage. These conditions coupled with oil formation or moisture resulting from condensation will cause increased resistance and misfiring. Corrosion at the ends of the terminal clips adds more resistance.

When new wires are installed, operators often make up the harness from bulk wiring, simply attaching the terminals without solder. It has been suggested that after a period of time, when corrosion sets in, that these connections be checked carefully for evidence of resistance. A noncorrosive solder should be used when necessary.

It might be mentioned that a preservative and water-proofer can be used on ignition cables in a move to lengthen life and efficiency. At least one product on the market at this time uses a spraying arrangement for application, is quickly applied and does a remarkable job in reducing leakage from cracked wet wires.

Checking Valve Guide Wear

Worn valve guides and stems are common causes of high oil consumption, exhaust smoke and excessive carbon formation in the combustion chamber. Excessive clearance permits oil to be drawn up the intake valve stem into the combustion chamber, where it raises havoc with engine efficiency. Especially after a ring job will this tendency be noted.

So be sure to check before reringing. Start the engine and squirt oil on the camshaft end of the intake valve stems. Excessive wear here will show up in exhaust smoke. Then recheck after the head is removed with a dial gage. Adjust the dial gage so that the pointer rests on the head of the valve. Wear limit at this point is .004 in. side movement total indicator reading.

Ford High Compression Heads

New high compression cylinder heads are now available for Ford V-8 passenger cars 1938 through 1948, with a 7.5 to 1 compression ratio. These heads carry a Ford part No. 81AS-6050-B.

Air Brake Hose—F-8 Trucks

According to the *Ford News Bulletin* all F-8 trucks equipped with air brakes should the air hose elbows positioned on the rear brake chambers so that $\frac{1}{8}$ in. clearance exists between the rear brake hose and the outside diameter of the chamber. This will provide a minimum of clearance of $\frac{5}{8}$ in. between the hose and the spare tire when the axle is in the rebound position and will eliminate the possibility of chafing the hose.

IHC Standardizes Propeller Shafts

International Harvester Co. has initiated a propeller shaft standardization program in a move to provide faster replacement service in the field. Stocking of propeller shafts has become a problem due to the many varied wheelbases, the combinations of transmissions and axle equipment available, the older truck models that are still in active service.

Under the new system propeller shafts will be ordered in the usual way, using service parts catalog part numbers. In some cases the shaft received will be identical to the original; in other cases the shaft will differ in appearance. However, dimensionally with respect to length, spline or yoke details, the new shaft will replace the old. The main difference in the standardized shaft will be in the tube diameter or in the type of stub or splined end. So try it before you decide that your new shaft won't work.

Quick Checks for Filter Cartridge

From Studebaker comes some practical tips for checking the condition of the oil filter cartridge—without removal.

Check the temperature of the oil filter housing after the engine has warmed up. It should be as warm to the touch as the upper part of the radiator. If cool, it may indicate a clogged filter element or a restriction in the lines.

A sharp tap on the metal filter of a cold engine should produce a ringing sound. This indicates the element is not clogged. If the tap produces a dull thud, chances are the element needs changing.

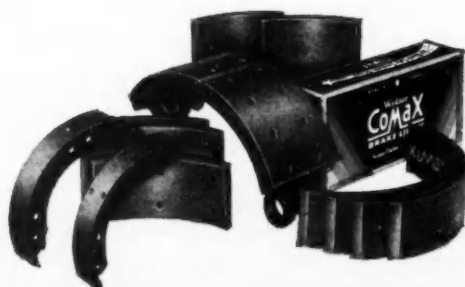
A more positive test, according to the Studebaker
(TURN TO PAGE 14, PLEASE)

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INDUSTRIAL CRANE BRIDGE BRAKES

At Your Service

Continued from page 10

Service Bulletin, is to idle the engine and disconnect the filter-to-crankcase return line at the filter. Clogged elements, of course, will restrict the flow of oil at this point.

New Cylinder Head for Plymouth

Smoother and quieter performance is said to be obtained with the use of a new cylinder head now available for the P-22 and P-23 Plymouths. This head can be used as a replacement on earlier models from P-19 up to early P-22 and P-23 cars. The same compression ratio (7.0-1) is used.

Plymouth now recommends use of SAE 80 Fluid Gear Lubricant for the transmission. This heavier lubricant provides for quieter shifting.

Crankcase Breathing and Oil Leakage

Many cases of leakage at the crankcase are not the result of wear or improper sealing of gaskets at all, but simply a result of gas build up in the crankcase. The ventilation system removes moisture from the combustion process. It aids in removal of contaminated gases formed by oil deterioration and scavenges the combustion products that blow past the rings into the crankcase. When restricted, pressure build up may force oil out the filler, through the bearing seals or through gasket seals that otherwise would contain the lubricant. So check up on the ventilating system before you blame other factors in oil leakage.

Notes on Piston Resizing Methods

Mr. Hilmuth Braendel, director of engineering and production, Wilkening Mfg. Co., in a paper prepared for the SAE Annual Meeting in Detroit, made some concrete recommendations with regard to piston resizing in heavy-duty fleet maintenance. Although the piston skirt is subjected to less wear than the other two components of the power assembly, he said, it is essential that excessive clearance between cylinder and the piston be avoided when reringing an engine. Better ring life will be obtained in worn as well as new cylinders if relative motion between the piston and cylinder, especially cocking, is reduced to a minimum. It is recommended that pistons, which are in other ways serviceable from the groove wear standpoint, be resized to reduce the side clearance caused by both piston and cylinder wear. One of the best methods to resize heavy-duty pistons especially, is to knurl both sides of the skirt to provide at least original specification side clearance. The knurling method has an additional advantage in that it will produce an interrupted surface on the thrust bearing sides of the piston which will make it very resistant to scuffing. The pockets of lubricant retained by the knurling surface will prevent scuffing to such a degree that closer piston fits can be employed than are possible with new conventionally

finished pistons. This is especially important in rebuilding procedures because it provides a wide margin of safety in regard to piston clearance. The desirability of this interrupted surface from the scuffing standpoint is so great that even original equipment pistons are manufactured with such a surface where economic considerations permit it.

Loose Cotter Pins Spell Danger

Examination of several front end assemblies and front wheels recently has revealed a maintenance failure that can only lead to trouble. Loose cotter pins in control arms, steering mechanisms and front axles point to potential breakdowns and accidents.

Now every mechanic knows how to install a cotter pin correctly; it is simply a matter of haste. First, it must be of proper size. Second, it must be cut off at proper length, and third, it must be bent firmly around the castellated nut so that no movement is discernible. Unless all these factors are taken into account, you can expect loose nuts, inaccurate adjustments and eventual accidents.

Notes on Brake Balance

Brakes must be balanced within close limits if the vehicle is to meet regulations which require a stopping ability of 30 ft at 20 mph. To meet this requirement a brake system must produce a retarding force at the tires on the ground equal to 45 per cent of the gross weight of the vehicle. When one wheel or one set of axles does not perform its share of the work, you cannot expect to stop in this distance.

Brake balance requires that the distribution of braking between all wheels is the same as the distribution of the gross weight. It requires that the brakes are simultaneously applied on all wheels. All shoes must contact the drums at equal effective pressures. The brake is a conversion machine in that it converts motion or kinetic energy into heat. In this respect the heat generated is directly proportional to the amount of work performed by each wheel. Therefore, a check of brake temperature is one of the most accurate ways of determining brake balance.

In this test approximately 20 normal stops are made with a fully loaded vehicle and a check is taken of brake drum temperatures with a pyrometer. Temperature should not vary over 25 deg between drums for satisfactory brake balance.

When poor balance is found, the troubleshooter makes an analysis of factors which can contribute to this condition. He will make a recheck of the following conditions:

1. Uneven brake adjustment at push rods.
2. Improper settings of push rods.
3. Poor drum to lining contact due to: eccentric, scored, bell mouthed drums.
4. Loose wheel bearings.
5. Binding cams or brake levers.
6. Worn slack adjusters.
7. Grease or oil soaked brake blocks.
8. Linings of different coefficients.
9. Improper load distribution.
10. Retractor springs in wheel chambers of unequal tension.
11. Unequal air pressure at the wheel lines.
12. Air pressure lag due to longer or restricted lines to front, rear or trailer wheels.

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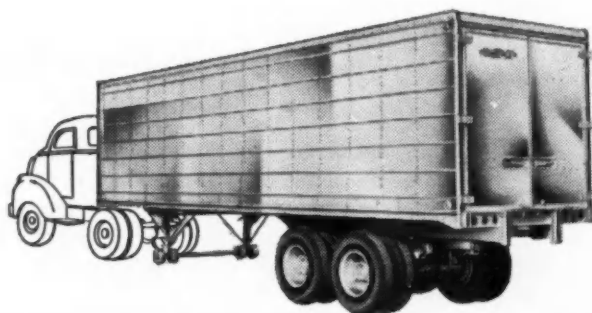
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The

OVERLOAD

E D I T O R I A L C O M M E N T

Logic Makes a Better Weapon Than Venom

THE Maryland Road Test story which begins on page 65 of this issue is vital to every truck operator. It is self-contained and needs no further comment here except for one detail. It begins with the words "anti-truck interests"—an expression that we do not like to use.

We are essentially an optimistic crew, always living in hope that the day will come when all forms of transportation can work together on a realistic basis. But when the opposition plays dirty, the least that the truck industry can do is to be cognizant of that fact, and ready for action.

For years every Congressional investigation, every ICC hearing, almost every speech by transportation experts has begun with the idea that there is a place for every form of transportation—that there is a job for each to do in a manner that it can do best. But after the smooth-tongued opening phrases, come the bombshells! They'll do it every time.

One of the most potent last month came from the lips of Fred Carpi, vice-president of the Pennsylvania Railroad. Perhaps flushed with recent victories in the Pennsylvania legislature (Fair Truck bill vetoed by Governor Fine), he spoke before 900 businessmen at the annual meeting of the New England Oil Information Committee. According to the wording of his company's official release, Mr. Carpi said:

"The unrestricted use of giant trucks on the public highways is the dark cloud in an otherwise clear and bright outlook for automotive transportation. . . . The number of big trucks is increasing, and their interference with the free flow of automobile and small truck traffic—and with the safety and the tempers of motorists—is out of all proportion to their numbers."

Best rebuttal came from scrapping Mack Trucks President E. D. Bransome in these eight words before the National Council convention in Washing-

ton the next day: "Isn't that the damndest speech you ever heard?"

Mr. Bransome sums up the trucking industry's thinking in a nutshell. But it is important that we go one step further. It isn't really going to do our industry any good just to be mad at Mr. Carpi. But it is vital that the industry appreciate the seriousness of Mr. Carpi's point of view and take steps to correct public impressions.

Some railroad men *actually believe* these things they say about trucks and do everything possible to de-rate the trucking industry in their appeals to the public. Trucking people know that Mr. Carpi would be a mighty unhappy citizen without the products that trucks bring him for his daily existence. Most of us know that, as the "Pennsy's" own release points out, Mr. Carpi's railroad is "one of the nation's largest truck operators." And the railroad trucks we've seen are not little.

Yet here is a man seriously arguing that the way out of our present-day traffic muddle is to replace each big truck with three or four little trucks. If this makes sense, we have failed to note that the use of three or four short freight trains is more conducive to a smooth flow of traffic on the rails, than one long one.

Let's not be mad at Mr. Carpi. Instead, let's do everything possible to understand his point of view; then fight anti-truck venom with pro-truck logic, and carry the story to every city, village and farm. The Maryland Road Test report referred to above can make one good tool in the campaign. But let's also remember these oft-repeated truths:

That the smallest railroad is about the same size as the largest motor carrier.

That to make the truck story heard, *everybody* must get into the act; and

That in the eyes of the public a truck is a truck, no matter who drives it, whose name is on the side or what manner of business owns it.

Bart Rawson
Editor



WASHINGTON RUNAROUND

by KARL RANNELLS Washington Correspondent

Vital Senate Hearings Underway ICC Changes Late

Public hearings before the Senate Interstate and Foreign Commerce Committee on proposed changes in the Interstate Commerce Act were scheduled to open on March 3. Late in February the committee had so many requests to testify that it was certain the hearings would last through March 21, somewhat longer than had been expected. A committee source said, however, that the hearings would have to wind up not later than March 24.

Meanwhile, the number of proposals before the committee had swelled to 22 as of mid-February, including one which proposed standardization of rates for household goods when transported for the government.

Facing the committee is the decision of whether to try to put the changes it approves for the act into one omnibus bill or submit the changes it approves as they now stand—piecemeal in separate bills. The current thinking is in favor of separate bills.

Diversion Complicates Building Program

Diversion of gasoline and other automotive highway taxes to other uses has again been brought out and kicked around. But no action to remedy this abuse is likely to result now. The occasion was the hearings on highways which have been going on, beginning early last month and scheduled to end about February 19, in Public Works committees of both the House and Senate.

The White House has asked that federal highway funds for next fiscal year, beginning July 1, be held to not more than \$400,000,000 instead of the usual \$500,000,000 appropriations. But somewhat higher amounts, ranging up to about \$700,000,000, have been proposed in bills introduced by various congressmen.

Support of the White House figure was given by the Bureau of the Budget which recommended the amount for not one but for each of the next two years. But, although agreeing that no big, new projects should be started now, the Bureau of Public Roads said present road work is only half what should be under way. It wants money available when the materials shortages begin to ease, perhaps later this year.

Parts Prices May Go Up

A campaign conducted by rebuilders and resellers of automotive engines and parts has a fair chance of getting a tailored order which would result in higher prices to the buyer of these commodities.

Office of Price Stabilization has, in effect, promised such an order to cover increased wage and materials

cost up till July 26, 1951. The big hold up in making good on the promise is that the government has not yet succeeded in working out a reliable method of tying in the proper relationships of rebuilt engines and used parts prices to those of new equipment.

Meanwhile, producers of new replacement parts expect an adequate supply during first half of 1952. But, spokesmen have warned National Production Authority shortages could show up during the last half through increased demand resulting in current cutbacks in passenger car and truck output.

Trailer Output Down

Hope is dimming that the truck-trailer industry will be able to produce the expected 67,000 units for commercial use during 1952. It was predicted at the industry's convention in Texas that the probable figure would be about 62,500 units instead. On the basis of the second quarter materials outlook, some sources now think a production of about 60,000 is more likely.

Single Cargo Handling Tried

Army's Transportation Corps is experimenting with a new wrinkle—sending trailers through from point of origin to final destination with a single cargo handling. In the case of overseas shipments, for example, a tractor would pick up a loaded trailer at an inland depot (or defense plant), drop it off at a port to be loaded aboard ship, and another tractor would pick it up at the disembarkation point for delivery, seal unbroken, to the overseas military depot. If successful, operations will be expanded but probably confined at first to cargoes of special value or those requiring special handling.

Safety Regulations Stymied

Last month, the long-awaited safety regulations were still pending before the interstate commerce commission. The final draft had been whipped into shape and was scheduled to be submitted to the commission as a wholesome item in late February. This was after minor last-minute revision to the proposed rules not only to have them conform more to individual views of commission members but to offset informal objections of some carrier groups.

There was no indication as to how soon they might be approved and issued. There was divergent opinion on the subject among commission sources but these were generally hopeful that commission action would be taken before the end of March.

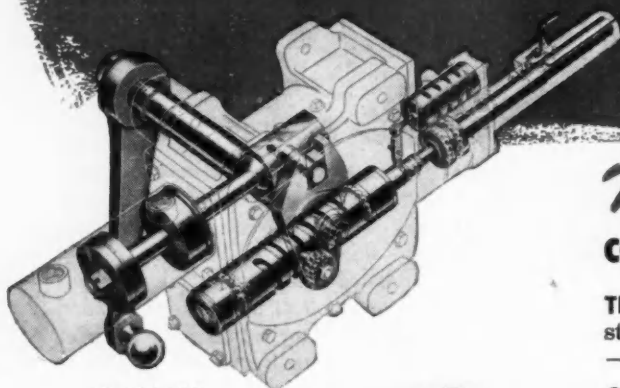
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- (1) Automatic operation instantly prevents loss of control in soft ground, sand, snow, from tire blow-outs or road obstructions...
- (2) Steered wheels promptly return to straight-ahead driving position after turns...
- (3) There is no lag in the hydraulic response either for power assistance or resisting shocks—consequently no tendency to over control.

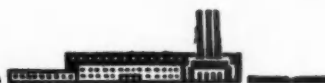
While most current Ross Hydrapower production is devoted to military needs—as government requirements permit, Ross Hydrapower will bring new steering ease, safety and satisfaction to additional commercial vehicles and passenger cars.

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DETROIT DISPATCH

by LEN WESTRATE Detroit News Editor

Truck Prices Looking Up

Truck prices may go upward again before too long. There is still room for some adjustments under the Capehart amendment. Ford did not raise prices on its new line, despite its engineering and development costs but undoubtedly could get authorization to do so. Competition probably has something to do with prices not yet going up, but it looks as though someone is going to head the parade before too long.

Second Quarter—240,000

Truck production quotas for the second quarter apparently have finally shaken down to a total of 240,000 units. Of this number 123,200 or 56 per cent will be lights, 66,000 or 30 per cent will be mediums, and the balance of 30,800 or 14 per cent will be in the heavy category. An additional 20,000 will be permitted for the military, Government agencies and for Canada.

Brake Study Signals Trouble

A Bureau of Public Roads report on truck brakes, expected soon, is likely to be critical of the trucking industry. BPR made an extensive survey of brakes on trucks in use in various sections of the country, and it is understood that results left something to be desired. Reaction of truck manufacturers is that such tests are not conclusive, since the manufacturer has no way of controlling maintenance of brakes after the vehicle leaves the factory and also no control of overloading, which imposes a strain on the braking system which it was not intended to carry. Nonetheless there may be considerable activity among state legislative bodies after the BPR report is released.

Whither LP Gas?

With Reo and International Harvester now supplying LPG engines as standard equipment, other large volume truck builders are watching the development, but apparently are not yet planning factory installation of LPG equipment. They have open minds on the matter, but also have some reservations. They point out that demand is regional with most of it in the South and West, where LP fuel is most readily available. One manufacturer says that if LPG use increases substantially, both the price of the fuel and taxes will be increased, cutting down the cost advantage. Another company says that it wants to determine whether this is another of the LPG cycles the industry has seen in the past or whether it is here to stay this time. Other companies point out that LP fuel is by no means universally available and that its use in certain locations, such as certain tunnels in New York is prohibited.

Truckers Seek Higher Rates

Truck operators in the Central States area are seeking rate increases estimated at about 7½ per cent, to compensate for recent substantial pay increases. One large operator has asked for an emergency rate increase because the new wage scale has resulted in substantial losses. Basic hourly rates are up 19 cents an hour for the first year on a three-year contract, with mileage rates up 0.75 cents. Paid holidays also are included. Contract also calls for further annual increases of ¼ cent in the mileage rate and 7½ cents an hour as improvement factors for the next two years, contingent upon Wage Stabilization Board approval. The total pay package is estimated at more than 40 cents an hour—the largest ever awarded in the trucking industry.

Truck Sales Picking Up

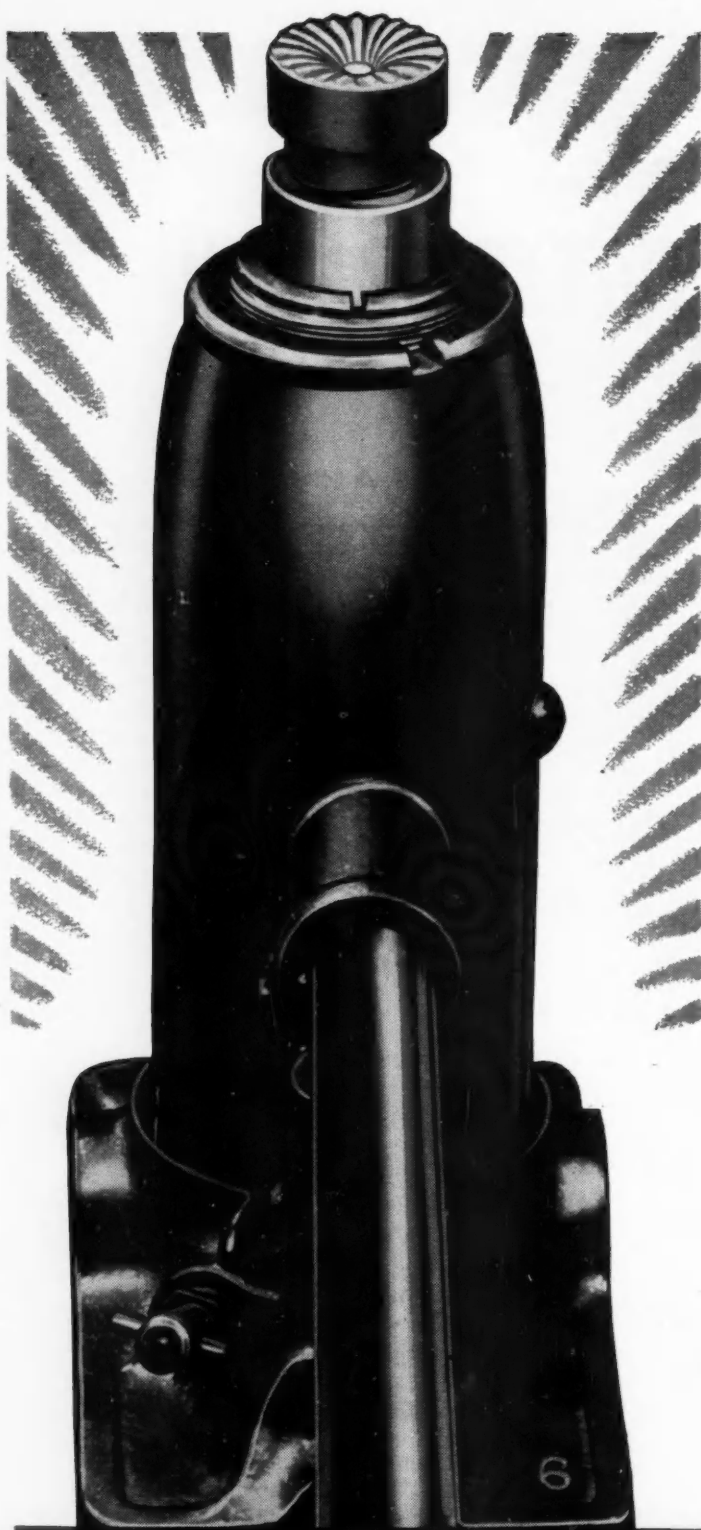
Final figures show that 1,003,850 new trucks were sold last year, compared with 1,142,307 the year before. Although new registrations dropped 138,457 last year despite a new all-time production record of 1,420,000, the deficit was not due to lack of sales so much as greatly increased exports and a large but undetermined number of military units.

States Listen—Trucks Roar

There is evidence that state officials are putting pressure on truck manufacturers to come up with some evidence that they are working on quieter mufflers for motor trucks. Legislation has been deferred in several states pending development work by manufacturers to develop mufflers with a more acceptable noise level. It is understood that considerable progress has been made in that direction using stainless steel, although the cost is considerably higher than for conventional mufflers. However, it seems likely that, higher cost or not, quieter mufflers are going to come either voluntarily or by law.

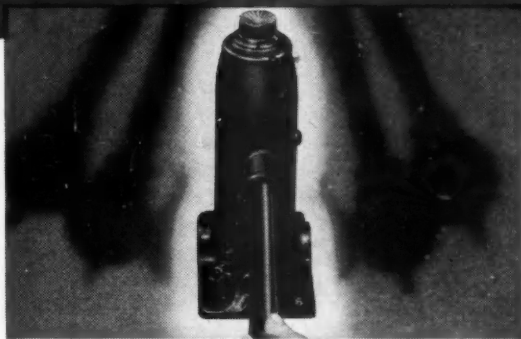
Nickel Supply Critical

There has been some disquieting talk from Washington about a complete ban on use of nickel in civilian products. If that were to come about, it would cause a very serious problem for truck builders, especially in the matter of engine valves and axle gears. While there is some concern in the industry there is no panic, probably because such an order would obviously be much too drastic and would have to be modified. Nonetheless, even further curtailment of nickel use would cause some knotty problems.



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AT 30 AND 50 TONS CAPACITY**



**WALKER
LEADS IN
JACKS**

WALKER

CCJ REPORTS

on News of the Industry

Ohio's Carriers Merge

Merger of Ohio's two major motor carrier associations into the Ohio Trucking Association has been announced. Consolidation involved about 2000 Ohio trucking firms previously associated with either Highway Transportation Institute of Ohio or the Ohio Trucking Association. Present officers and trustees of OTA were to be retained pending new elections.

To Collect Diesel Tax

Truckers from other states who operate through Pennsylvania are warned to retain receipts for all fuel bought while traveling in Pennsylvania. A new law designed to plug loopholes in the state's 5 cent diesel tax invokes the levy on all diesel fuel over 50 gallons in the truck's tanks upon entering the state.

Atlantic City Chosen as ASI Show Site

The Automotive Service Industries Show for 1952 will be held at Atlantic City, N. J., Dec. 10 through 13, with convention arrangements for the sponsoring groups on Dec. 8 and 9.

In making the announcement, D. H. Teetor, chairman of the joint operating committee of the show advised that the decision to hold the show at an East coast point came in response to thousands of automotive wholesalers clamoring for a change of location. The ASI show has not been held in the East since 1946.

Resolution 81 Adopted

The Wage Stabilization Board has adopted Resolution 81 to help clear up confusion regarding wage adjustments for over-the-road drivers who are customarily paid on a trip or mileage basis. This action rules that the increases allowable under Regulations 6 and 8 may be applied to the mileage and trip rates provided for in contracts or wage schedules. They may also be applied to other wage structure elements such as waiting time and lay-over expense—if these are in a contract or a demonstrated wage practice.

Tentative Program Released

The program proposed for the annual meeting of the Motor Vehicle Committee of the American Gas Association in Philadelphia, April 7-10 has been released by the chairman, W. E. Albright. The program includes discussion and lecture sessions on operation, component parts, maintenance, personnel selection and rating systems, shop tools, operational economics, and appearance maintenance.

Wheelock Joins CCJ As Technical Editor

R. L. Wheelock, automotive engineer, has joined the Chilton organization as technical and associate editor of CCJ. Mr. Wheelock brings to this publication a wealth of technical background that promises to add new tones to these pages. A Brown University (TURN TO PAGE 110, PLEASE)

DATES and DOINGS

MAR. 17-18—Motor Vehicle Fleet Supervisors Courses, The Engineering College, University of Washington, Seattle, Wash.
MAR. 18-21—American Transit Assn., Region 3 Meeting, Carter Hotel, Cleveland, Ohio.
MAR. 20-23—10th Annual Southwest Automotive Show, Sam Houston, Coliseum, Houston, Texas.
MAR. 22-APR. 6—Chicago International Trade Fair, Navy Pier, Chicago, Ill.
MAR. 24-28—American Transit Assn. Region 5 Meeting, Chase Hotel, St. Louis, Mo.
MAR. 27—New Jersey Motor Truck Assn. Annual Dinner, Hotel Essex House, Newark, N. J.
MAR. 27—Maine Truck Owners Association's annual meeting and dinner, Lafayette Hotel, Portland, Maine.
MAR. 28—Annual Convention, Motor Vehicle Assn. of Alabama, Inc., Thomas Jefferson Hotel, Birmingham, Ala.
MAR. 28-29—Annual Convention, Wyoming Trucking Assn., Hotel Henning, Casper, Wyoming.
MAR. 29—Annual Convention, Arizona Motor Transport Assn., Hotel Westward Ho, Phoenix, Arizona.
APR. 1-4—Greater New York Safety Council Annual Convention, Statler and New Yorker Hotel, New York, N. Y. (Headquarters—Hotel Statler).
APR. 6-8—Customer Relations Council, American Trucking Assn., Spring Meeting, Shamrock Hotel, Houston, Texas.
APR. 7-9—National Truck Leasing System 7th Annual Meeting, Conrad Hilton Hotel, Chicago, Ill.
APR. 7-9—Seventh Annual Meeting and Lubrication Show, American Society of Lubrication Engineers, Hotel Statler, Cleveland, Ohio.
APR. 7-10—American Gas Assn. and Edison Electric Institute Joint Motor Vehicle Committee Annual Meeting, Benjamin Franklin Hotel, Philadelphia, Pa.

APR. 16-17—Pennsylvania State College, Institute of Public Safety Refresher Course for Motor Fleet Supervisors, Penn State Campus, State College, Pa.
APR. 25-28—New England Regional Automotive Show, Mechanics Bldg., Boston, Mass.
MAY 5-7—American Transit Assn., Region 7 Meeting, Multnomah Hotel, Portland, Oregon.
MAY 5-9—Pennsylvania State College Driver Trainers Course, Penn State Campus, State College, Pa.
MAY 6-8—Fourth Highway Transportation Congress, National Highway Users Conference, Mayflower Hotel, Washington, D. C.
MAY 12-15—American Trucking Assn. Spring Meeting, Drishler-Wallick Hotel, Columbus, Ohio.
MAY 15—Annual Convention, Rhode Island Truck Owners Assn., Hotel Narragansett, Providence, R. I.
MAY 15-17—Annual Convention, Georgia Motor Trucking Assn. Inc., Hotel Oglethorpe, Savannah, Georgia.
MAY 19-23—Pennsylvania State College Motor Vehicle Maintenance Supervisors Course, Penn State Campus, State College, Pa.
MAY 20-23—American Transit Assn., Region 2 Meeting, Bellevue-Stratford Hotel, Philadelphia, Penna.
MAY 22-24—Annual Convention, Washington Motor Transport Assn., Inc., Hotel Olympic, Seattle, Washington.
JUN. 1-6—Society of Automotive Engineers Summer Meeting, Ambassador and Ritz-Carlton Hotels, Atlantic City, N. J.
JUN. 5-7—Texas Motor Transportation Assn. Annual Convention, Drishler and White Plaza Hotels, Corpus Christi, Texas.
JUN. 6-7—Pennsylvania Motor Truck Assn. Annual Meeting, Penn-Harris Hotel, Harrisburg, Pa.

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Strut



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BULLETIN BOARD



Don't Tech It!

Most drivers, when they lift the hoods on those horses they drive, are as confused as the small boy who lost his chewing gum in the hen house. And their search for engine trouble is about as futile as an attempt to locate an undertaker at a football game.

But a lot of drivers add chaos to confusion when they attempt to "work on" tempting nuts and bolts and adjustments in an effort to get more power. They consider themselves troubleshooters — they really are troublemakers.

Better leave it alone—especially if you are unfamiliar with the iron and steel that supplies the go. It's no disgrace to be ignorant of engine operation; but it's damned inconvenient to hoof it back to town as a result of messing up details.

Don't touch it. If she needs a tune up, let George do it. If an engine miss develops, better call the garage. An improvised carburetor adjustment or a make-shift governor setting won't add horsepower, but will multiply your headaches. Broken wires, stopped up gas lines, defective distributors can seldom be fixed up on the spot anyway, without proper tools and instruments.

It is not your responsibility as a driver to "overhaul," but it is your business to know what and what not to touch. Your boss is somewhat like Mazie in this respect.

He must draw the line somewhere, and what you can and can't do will be determined by many factors. Only in an emergency should you attempt to fill in for a mechanic.

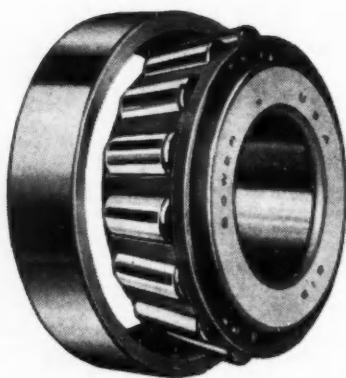
Now if you are curious, let the shop boys show you how the engine works. Find out about compression and its effect on power. See how proper spark at the proper time is necessary for efficient operation . . . and you will have plenty of respect for precision adjustments. Let the boys who know their onions show you how the clutch functions, how the brakes brake, how the transmission transmits. It's interesting, fella', and it's good training for better drivers. But 12 easy lessons won't make a mechanic out of you.

If you want to help out the shop boys, spend some time on those cry sheets. There you can raise plenty of hell in diagnosing the condition of your wagon. But be sure you are right, specific and clear in telling them off . . . and don't forget, you're the driver—not the mechanic.

A mechanic gives service, but a tinker seldom gives a damn. So before you start screwing around with every adjustment that's handy, stop, to figure the consequences. For the difference between an engine trouble shooter and an engine troublemaker is a hell of a lot of shop training.

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Here's convenience . . . quality . . . availability . . . for every replacement roller bearing requirement! *Both* tapered and straight roller bearings in the Bower line—*both* the products of precision manufacture! Quickly available from your Federal-Mogul jobber—and *he's* backed by Federal-Mogul Service branch stocks. A nation-wide service . . . and a service you can use every day. You get Bower roller bearings—and you get 'em when you need 'em—from your Federal-Mogul jobber!



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(Division of Federal-Mogul Corporation)

DETROIT 13, MICHIGAN



By W. R. Roecker
Maintenance Superintendent
Waterloo, Cedar Falls & N. R.R.
Waterloo, Iowa

Any suspicious circumstance in steering, vibration, tire wear, etc., leads to a check on the tire balancing machine

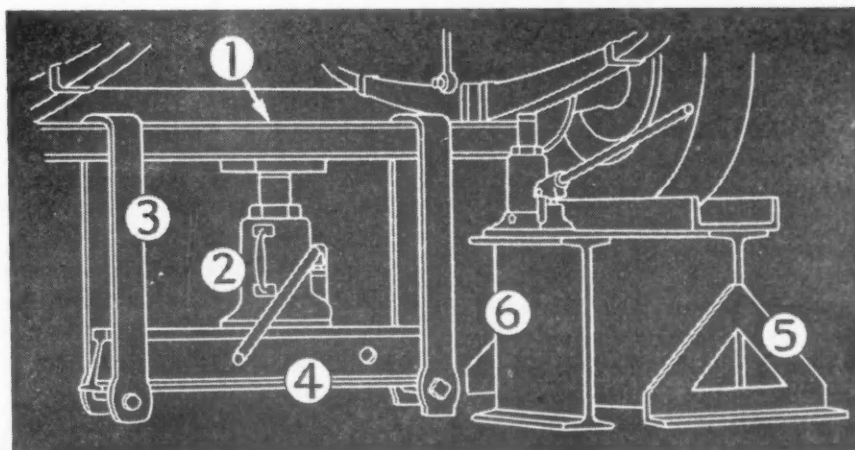
Wheel Balancing Ups Parts Life by 35%

Reduction of bus vibration saves bodies, steering assemblies, front ends

TOO often we think of wheel balancing and front-end alignment only in terms of increased tire mileage instead of viewing it from the standpoint of its overall benefits. Our new program of balancing and front-end alignment has reduced our cost of body upkeep by keeping down body cracks and corner failures. We have also obtained a reduction in cost of expensive steering gear parts by increasing their life span, as well as increasing the life of king bolts and bushings, tie-rod ends, shock absorbers, springs, spindles and bearings and axle misalignment.

It is an error to consider that comparatively slow-moving city buses need wheel balancing less than over-the-road vehicles. A slight out of balance (TURN TO PAGE 130, PLEASE)

Alignment fixture and system of re-alignment was worked out in shops. Device consists of two ½ x 3-in. steel loops slipped over axle to hold steel rail for hydraulic jack base. Another jack raises one wheel for scribing. A camber gage is attached to wheel while axle is bent at center to correct alignment



- ①-BUS AXLE ②-10-TON JACK ③-½ x 3-IN. STRAP
- ④-R.R. RAIL ⑤-HOME MADE STAND ⑥-I-BEAM STAND



FIG. 1. Supplee's new retail body was designed for pallet loading. Note double-hinged rear door



FIG. 2. Forklift inserts last pallet, completing route's retail orders. Arrow points to safety rail

Savings in time and labor effected by loading system
coordinating special bodies with handling equipment

PALLET LOADING Speeds

V COMPLETELY mechanized facilities for handling dairy products on pallets has reduced costs at our new milk plant in Philadelphia. While this material handling system is not new in the automotive industry, it is just beginning to find application in dairy plants. The reason is fairly obvious—until recent years, most dairy buildings had a number of floor levels which precluded the use of fork lift trucks. By building the plant floor and all docks to one level, we are able to handle incoming shipments of supplies, intra-plant moves and outgoing products with equal ease.

In order to extend the use of the system to the loading and unloading of delivery vehicles, modifications in truck body design were necessary. Dock heights also were made to coincide with the various types of trucks required in our business. This was done by adjusting the paved ap-

By H. G. Steigerwalt
Transportation Manager
Supplee-Wills-Jones Milk Co.
Philadelphia, Pa.

proach levels of the yard. In addition, several Leva-Docks were installed which provide perfect mating of the dock with the truck floor.

Needless to say, many departures from standard dairy construction were required to complete the chain, but since this is primarily a report of the truck designs involved, we shall confine discussion to trucks and their loading.

Retail Truck

AS may be seen in Fig. 1, our new retail delivery vehicle is a compact unit using a short wheelbase,

forward control type chassis of popular make. The body features full opening one quarter rear doors with two unobstructed floor levels and low serving steps on either side. The forward or working floor level represents frame height. The raised section over the wheels normally carries the payload, consisting of two pallets placed side by side.

A maximum of forty cases of bottled milk and other packaged products may be carried on each pallet. Fig. 2. Sliding and shifting is prevented by corner angles on the pallets and the stacking irons on the individual cases. As an added precaution to prevent damage or injury to the driver in case of sudden stop, additional safety bars as seen in Fig. 3 are installed across the truck in front of the load area.

Full head room is afforded the driver in the front section of the body which he uses as a working area,



FIG. 3. Suppree driver looks over first pallet with his day's orders. Arrow points to guard rail



FIG. 4. Cold room with pallets lined up near conveyor. Over each pallet, at ceiling, hangs card with route's order

FIG. 5. Forklift coming out of cold room. Driver's order is shown on case

Dairy's Deliveries

serving from several cases at a time. If it becomes necessary to gain access to the rear part of the load while serving the route, only the center sections of the rear doors need be opened—thus preventing the open door from extending beyond the side of the vehicle.

Wholesale Truck

THE design of a suitable pallet loading wholesale milk truck, shown in Fig. 8, represented a much more difficult problem, because the pallet loading feature demanded a fairly high floor without wheel housings, while the driver required low serving doors and access to all portions of the load without climbing in and out of a high vehicle.

The wholesale trucks are compact units, using a 158-in. wheelbase, forward control type chassis. There are two full-opening rear doors. The side (TURN TO NEXT PAGE, PLEASE)

PRODUCT	RETAIL	WHOLESALE	1/2 PT. SCHOOL	1/4 PT.
1440 1334				
HOMO A	6			
HOMO B	20-2			
REG. A	1			
REG. B	9			
CHOC.	3			
23				
30+393=32				

FIG. 6. Above, shows tag used for filling route orders in the cold room. Route number is at upper left, vehicle number at upper right. FIG. 7. Right. Route foremen get tag summarizing all orders. This tag covers Routes 440 to 454, inclusive



PRODUCT	RETAIL	WHOLESALE	1/2 PT. SCHOOL	1/4 PT.
1440 1454				
HOMO	59			
913	72			
HOMO	33			
3993	330			
REG.	94			
244	15			
REG.	71			
1079	79			
CHOC.				
6209+1496=6217-526				

Pallet Loading . . .

Continued from Page 53



Fig. 8. This slightly modified version of the standard wholesale truck has one right hand side-serving door

FIG. 9. Below. Inside of wholesale body. Arrow points to hinged section, which permits moving pallet up front

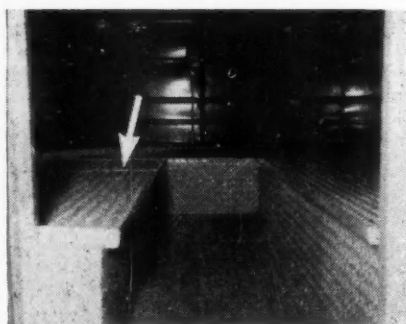


FIG. 11. Lower left. Front of body is loaded over stepwell (arrow). **FIG. 12.** Lower right. Last pallet moves in



serving doors with low step wells, Fig. 10, are connected by a low serving aisle (9 in. below the main floor) to a sliding front center door leading into the driver's cab.

Hinged bridge plates, Fig. 9, span the step wells and permit the stacking of one pallet on each side of the serving aisle. Three additional pallets are stored in the flat, unobstructed rear portion of the truck. Vertical safety bars, locking into the raised bridge plates prevent shifting of the load.

A slightly modified version of the standard wholesale truck is one in which there is only one right side serving door. This type truck is used on long routes with relatively few stops, whereas the two serving door units are used in city operations, where narrow one-way streets are common.

Loading Operations

LADING of the wholesale vehicles is achieved through the use of electric hand-lift trucks, shown in Figs. 11 and 12. Electric fork lift trucks are used in loading the retail vehicles, Fig. 5. Appreciable saving in loading time per truck has been realized.

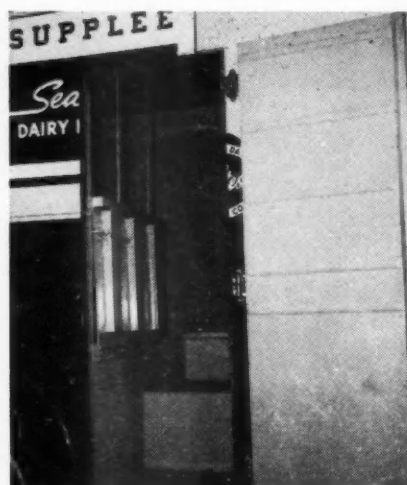


FIG. 10. Opened delivery door shows hinged section of upper floor raised and fastened to permit easy entrance

In the retail segment of the fleet, loading time per truck was approximately four and one-half minutes. This time now has been reduced to approximately two and one-half minutes. On the wholesale units, loading time was reduced from approximately twenty minutes to five minutes per truck.

To obtain these savings in loading time, the pallets are preloaded and then transferred from the cold room to the trucks. The cold room itself is about 144 by 163 ft. and contains three sets of conveyors feeding directly from the adjoining bottling plant. Throughout the day, these conveyors are in operation feeding cases directly to individual make-up points for

(TURN TO PAGE 174, PLEASE)



"DAKOTA JEEP"

By Robert Babcock
President and general manager
Dakota Transfer Co., Minneapolis, Minn.



Quick Tandem Conversion Boosts Payloads

Free wheeling, floating axle attached to fifth wheel improves weight distribution

FOR A LONG time trucking firms have been faced with the problem of carrying the maximum pay load, and still holding within the bounds of the complex load-limit laws of the various states. And with ever-increasing costs of operation, this payload factor

has become more and more acute.

It was seeking an answer to this vital trucking problem that I went into a huddle with the Fruehauf Trailer executives and engineers back in 1942. That huddle paid off. It brought into being the so-called

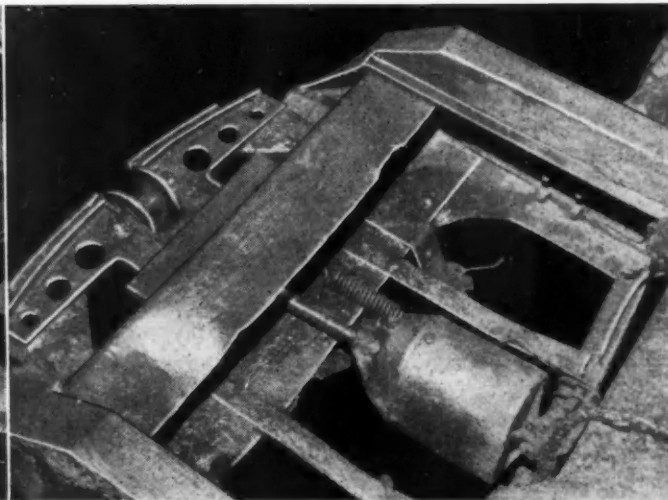
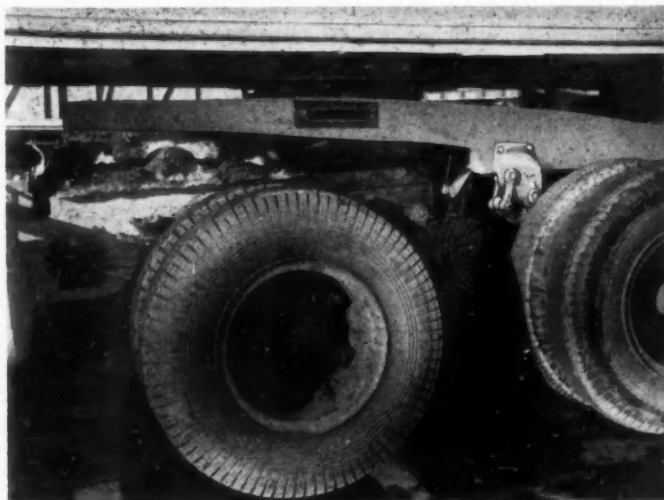
"Dakota jeeps," a temporary floating axle unit used for distribution of weight over an additional axle.

This "Dakota jeep" also was the answer to the weight problem in states where the restrictions were on
(TURN TO PAGE 98, PLEASE)

Below. The "jeep" is attached to tractor fifth wheel, while the trailer bed is connected to the second fifth wheel midway along the jeep's rocker beam. Cog on beam just below second fifth

wheel is used to inch the load forward or backward to provide for equal load distribution over the new tandem wheel assembly. Below, right. The "jeep-hook" is attached to tractor frame. A

connecting bar on jeep fits into small pulley in center of casting at upper left. Air cylinder, lower right, operated from cab, holds assembly while it is being attached to the tractor.

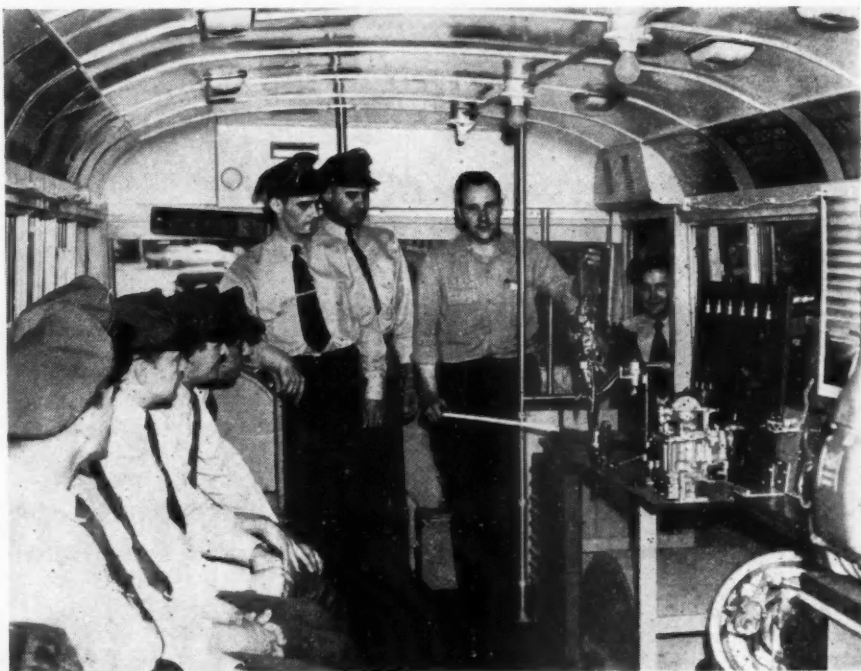




THE QUESTION of how best to get bus (or truck) drivers to approach maintenance problems from a viewpoint which has something in common with the viewpoint of mechanics has long been a matter of concern in many garages. That this lack of a common ground has existed cannot be better illustrated than in the matter of the trip reports many drivers customarily turn in after finishing a run. Too often, where there has been trouble, these reports have been sketchy, uninformative or misleading . . . all things that lead a mechanic to waste precious time following a long, wasteful path before arriving finally at the true source of the trouble.

But as of July, 1951, we think we have begun to overcome this lack of common understanding. Today our drivers have or are getting a very good idea of the workings of the mechanism they are driving. Their ability to explain trouble to a mechanic in the mechanic's language is certainly making our maintenance a great deal more efficient.

This has all come about because in July we instituted a school for our drivers. The school is contained in an old, but still mobile, Ford bus loaded down on one side with all of the various working assemblies found in our buses. These are complete but necessarily highly compact assemblies. They are: the variable pitch fan assembly; the two-way communication system; gear shifting mechanism; the complete air system including gages; windshield with wipers;



Seats arranged along one side are provided so drivers can watch demonstration. Classes are held at any hour of day or night, and men repeat course if necessary

Bus School Entices

Instruction course in mechanics set up in

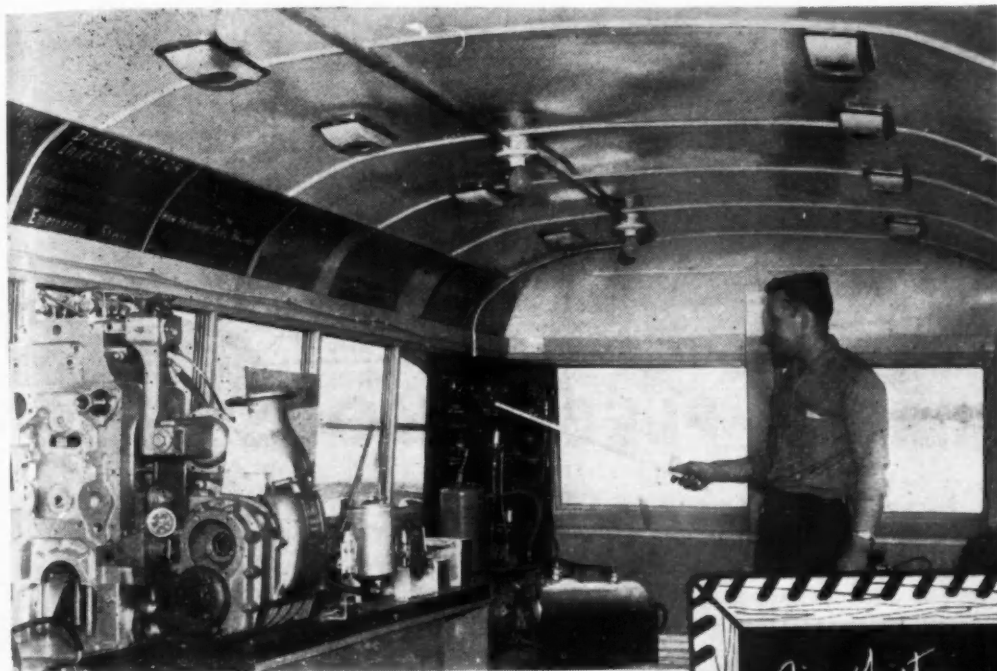
complete electrical system; front axle and brake assembly connected to air tanks; a one cylinder diesel engine and blower; defroster fans; gasoline fuel pumps; shutter assemblies. With the inside of a tire that has been run flat we show the drivers how its guts have been chewed out. We also demonstrate the proper way of attaching a tow chain.

Every assembly is found in the school bus. Each is complete and each works exactly as it does in actual road operation. It is operated either by compressed air from the air compressor or from battery current or from the city power line.

Seats for the drivers attending the school line one side of the bus. From here they watch the various assem-

blies working and they listen to a discussion. We demonstrate to them the more common types of road failures and show what corrective action can be taken. This instruction permits them to make either a comprehensive telephone or written report, so that the mechanics know where the trouble lies and can get going on it without waste of time.

The purpose of our school is not to make mechanics out of drivers. We do not try, nor expect to accomplish this. Rather, our chief objective is to stress the most common types of road failures likely to be encountered and to demonstrate what the driver can do to (1) enable the bus to pull over to the side of the road to await towing, (2) enable the bus to pro-



By Don Coutts
Garage Superintendent
Great Lakes Greyhound

Curriculum covers 17 phases of maintenance (see inset). Improved driver reports, reduced load failures prove value



Greyhound Drivers

old bus provides technical information that makes for better drivers

ceed to the next town, (3) enable the driver to effect temporary repairs to permit the bus to make the home terminal or (4) enable the driver to make a correct and detailed "trouble" report.

In our school lecture-demonstration we stress some things beyond others. For instance, we stress the harm done by "lugging" a diesel engine; by accelerating it cold or by allowing it to idle. We show the drivers how they can make a proper throttle adjustment on the road. We show drivers the damage that can accrue to fuel pumps when they run out of fuel and how to avoid this. We demonstrate how he can check valve clearances on the air compressor; when to disconnect battery cables and

how to prevent fires; how to switch from one fuel tank to another; how to keep fuel lines from becoming vapor locked; show what happens to an injector because of too-fast acceleration or idling; how the emergency stop should be made.

Our present curriculum divides the course into seventeen divisions only one of which is dealt with at a time. These divisions are: air system, brakes, diesel fuel system, emergency stop, throttle adjustment, diesel motor and injectors, diesel water pump, Evans fan, manual control of radiator shutter, fire extinguisher, jack, gas fuel pump, ignition, battery connections, windshield wipers, two-way communication system.

Notices of classes are pinned to the

bulletin board. In this respect it should be noted that a series of classes will be held all day long as an accommodation to drivers who, because of working hours, cannot all be in the garage at the same time. This means that we hold classes at any hour of the day or night. For instance, we have held classes from 10:00 a.m. to 1:00 p.m.; from 10 to 12 at night; from 8 to 10 a.m.; and even from 10 at night to 1:00 the next morning.

While this means extra effort to the garage superintendent, who is lecturer-demonstrator, we feel that the drivers are worth it because they attend these classes on their own time which is good proof of their interest.

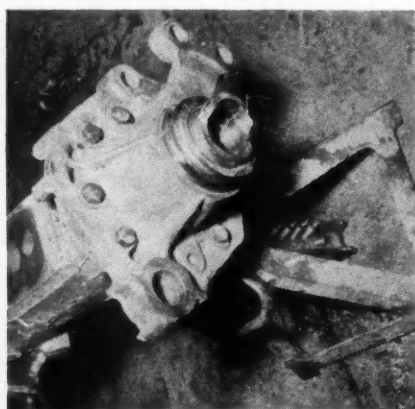
(TURN TO PAGE 94, PLEASE)

SHOP HINTS

FROM FLEET SHOPS

\$25 FOR THE BEST HINT
PUBLISHED EACH MONTH

\$10 FOR ALL HINTS
PUBLISHED EACH MONTH



HINT OF \$25 THE MONTH

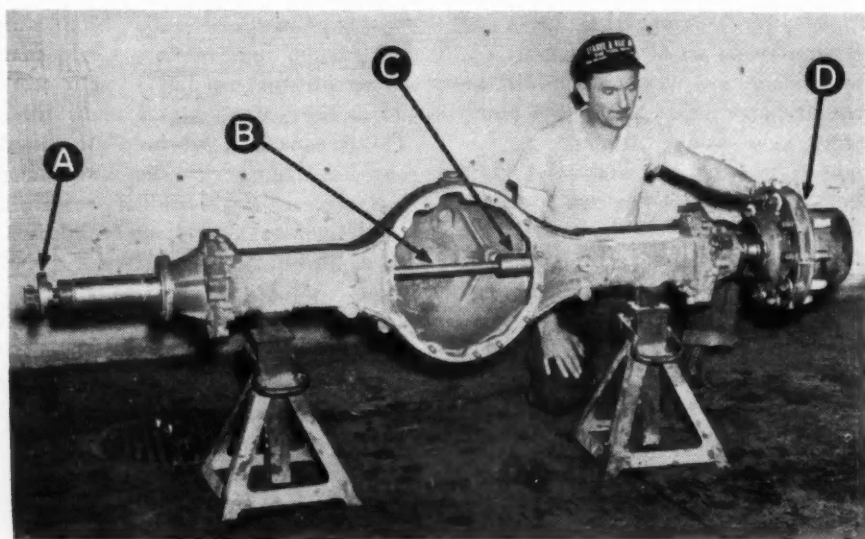
Home-Made Axle Tool

New Orleans Public Service
New Orleans, La.

The New Orleans Public Service Co. shop has developed a tool for bringing in a bus (or truck) when an axle breaks.

The purpose of the tool is to provide a temporary axle arrangement so that a disabled bus can be quickly pulled from the scene of the breakdown. It consists of a large and small steel rod, screwed together with a hub attached. The rods are machined so they will fit inside the banjo housing, the large rod supporting the wheel while the bus is being towed.

Main parts are: A. Lining-up washer which butts against the unbroken sleeve and aligns the assembly. The nut on the end of the small rod tightens the unit and holds it in place. B. Small steel rod to pull and hold hub in place. This rod is screwed into the rod shown at C. Rods of this type are supplied in different lengths for sleeves broken near the housing and sleeves broken near the thread. C. A large steel rod attached to the wheel hub which serves as a substitute sleeve. D. Scrap hub, complete with worn bearings, cups and wheel lugs.



1. Brake Adjustment

by C. M. Vanderwol
Portland, Ore.

A lot of trouble is had keeping some emergency brake shoes in line. Where a truck is in steady service, the top adjusting screw often wears into the brake shoes. The springs that hold the shoes steady and against the adjusting screws pull the lower part of the shoes together and wear the lower parts of brake lining. To try running them without the springs wears out the bushings.

This may be solved by making a new and easier adjustment at the lower part of the shoes. Remove the springs that hold the shoes against the adjusting screws in the upper bracket. Through the holes in the lower part of the brake shoes drill a $17/64$ hole, for a $1/4$ -in. cap screw, running drill through to other shoe so holes will be in line.

On some of the shoes there is a rib near the hole which will have to be ground off for the head of the cap screw to turn. The parts needed for each pair of shoes are:

$1/4$ -in. 28T cap screw $25/8$ in. long, with cotter pin hole near end.

$1/4$ -in. 28T nut to act as lock nut.

$1/4$ -in. 28T castellated nut.

$1/16$ -in. cotter pin.

Compression spring 2 in. long that will slide over $1/4$ -in. flat washers to put on end of springs.

Put compression spring with flat washers on each end between brake shoes, to spread shoes apart. Line up spring and washers with holes drilled in brake shoes. Install $1/4$ -in. cap screw $25/8$ in. long through hole in shoe, washer spring and washer to other shoe. Screw on plain nut until brake drags, release until free; put on castellated nut, cotter pin, and lock nuts together.

2. Splash Guards

by Howard L. Kline
Beth Allen Sales Co.
Allentown, Pa.

I designed this demountable splash guard so that it can be removed and rolled up like a flag and placed in cab when not in use. It is designed for a tractor operating without a trailer. (A new law pending in Pennsylvania, for example, will make it illegal to operate without such a device.)

Weld a piece of $3/4$ -in. pipe across rear of tractor cross member, with both ends flush with sides of frame. Drill holes three inches from both ends to permit fastening of portable rod and thread for thumb screws. The material of the splash guard can be made from a piece of canvas, with a frame of $1/4$ -in. iron rod to keep the flap in proper shape. Note: Be sure to check with state regulations for proper dimensions and location of this guard.

3. Knock-Out Tool

by Frank P. Coulomb
Inglewood Cal.

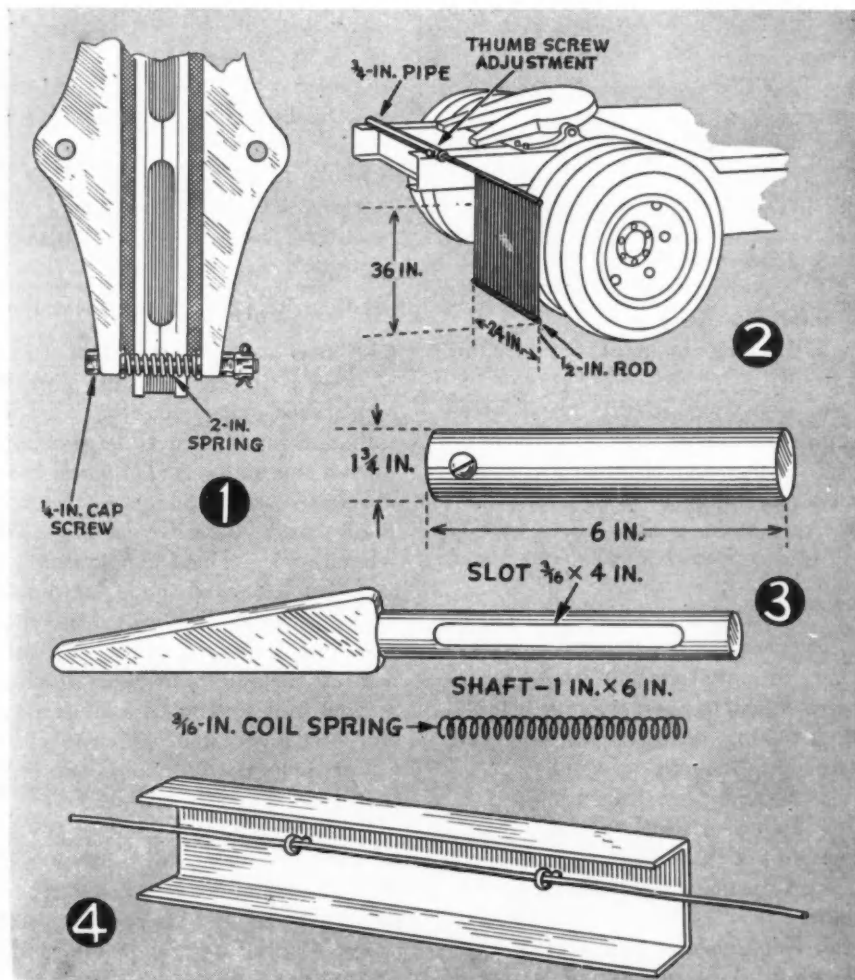
Here is a handy tool for driving taper shank chucks and drills from the drill press spindle, especially when several different size drills are used on a job and changes are made often.

The tool is made from 1-in. cold rolled steel approximately 12 in. long. A $3/16$ -in. slot 5 in. long is cut in the shaft as shown and a sleeve is fitted over this shank and fitted with a pin to slide in the slot. The other end is tapered to fit the drill spindle knock out slot, and the tool is ready for work. If desired, an 8-in. spring coiled can be fitted in the slot of the tool so that spring pressure holds the sleeve in position at the left end of the travel of the sleeve. Thus in use, the sleeve is pulled out and released so that force striking the end of the travel forces the drill or chuck from the drill press spindle.

4. Wiring Tip

by Harold J. Williams
Norristown, Pa.

When rewiring trucks for turn signals, clearance lights or signal lights, it is hard to find enough supports for the wire. We simply drill holes in the frame or a points where we need support and slip a cotter pin over the wire, bending it on the opposite side of the support.





Death of a Wheel Bearing

Foreign agents, mixing of greases, dirt, water raise havoc with bearing life. Damaged seals, improper adjustments, carelessness in assembly all take a heavy toll in wheel bearing miles

THERE ARE many factors contributing to wheel bearing failures which are reported from the field. However, they are difficult to track down because: (1) bearings vary, so that even good practice occasionally results in failure; (2) bad practice does not always lead to failure; (3) the correct lubrication of wheel bearings is a highly technical operation involving many operations which in turn vary with the make and model of car, the type of bearings, and the position on the vehicle—whether front or rear bearings.

Some failures are probably due to inherent variability in the very fine but complex mechanisms known as anti-friction bearings.

Many failures are due to contamination of the lubricant. This contamination may be due to:

1. Foreign matter introduced by improper handling and storage of the lubricant while still in containers.
2. Foreign matter introduced during the lubrication job by mishandling of the bearings.

* Excerpted from a paper presented at the National Lubricating Grease Institute in Chicago.

By D. G. Proudfoot*

The Pennzoil Co.

3. Improper cleaning.
4. Not removing all the old grease—mixtures are often bad.
5. Leaving some of the cleaning solvent.
6. Using wet or dirty air in blowing dry.
7. Water or dirt entering in service, some of it due to faulty seals.

Other failures are due to lack of attention to mechanical details, such as:

1. Inspection of bearings and seals before re-lubrication and re-installation, with replacement where necessary. Checking for etching, brinelling, rusting, dents, cracks, poor surface condition, etc.
2. Spinning dry bearings.
3. Improper seating of bearings, so they do not track properly.
4. Adjustment too tight or too loose.
5. Not greasing immediately after cleaning. A clean bearing let stand

too long or handled too much may corrode before it is re-coated with lubricant.

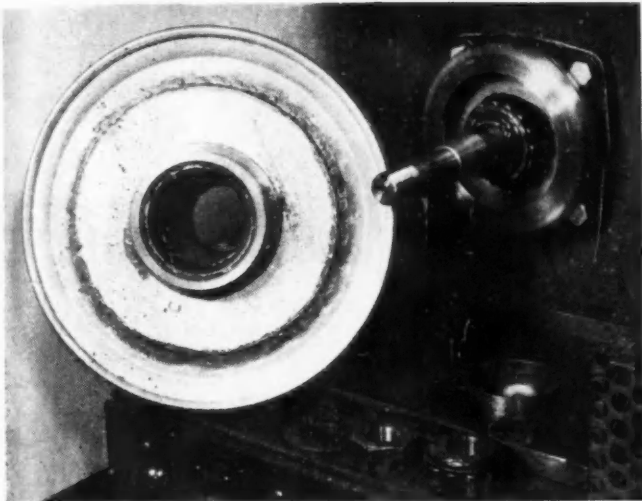
Many failures are due to use of excessive amounts of lubricant, while some may be attributed to the lubricant itself.

Foreign Agents

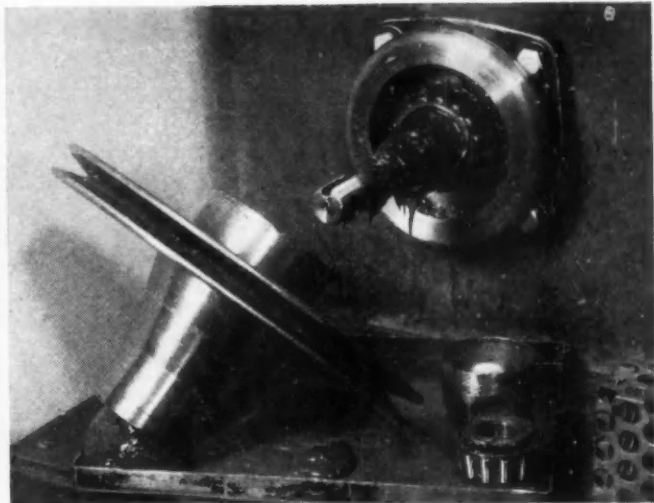
ON one occasion, a pail of grease was returned. The lab checked appearance and penetration immediately and found them to be standard. Then a run on the ASTM wheel bearing tester was made and reported. Poor, with excessive noise. The laboratory's retained sample from the same batch showed "good," with normal noise level. The grease was then dissolved, leaving a pronounced residue of metallic particles, which a magnet indicated to be iron or steel. Our best guess: the pail, with cover off or only partially on, had been kept near the shop grindstone.

One concern sent back a pail of wheelbearing grease with paper in it. We fished out some of the paper, which proved to be scraps of newspaper. Careful perusal of the scraps

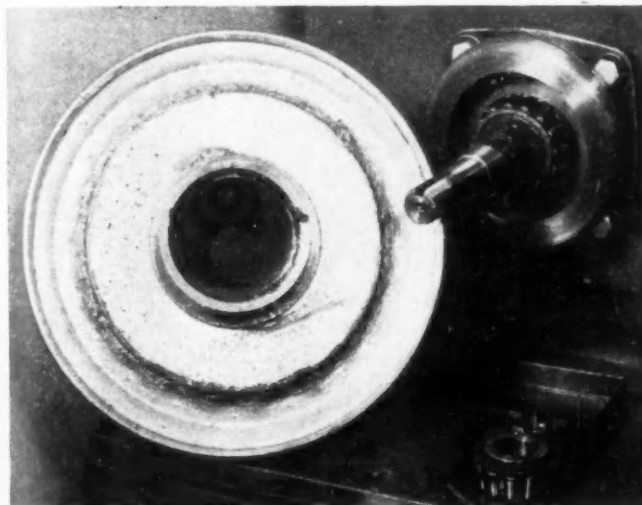
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Here is an example of a good wheel bearing run, with good covering of the bearing and no movement of the grease in hub



Effect of too much grease. The same grease was used in this bearing, but 50 per cent overfilling was tried. Results are disastrous



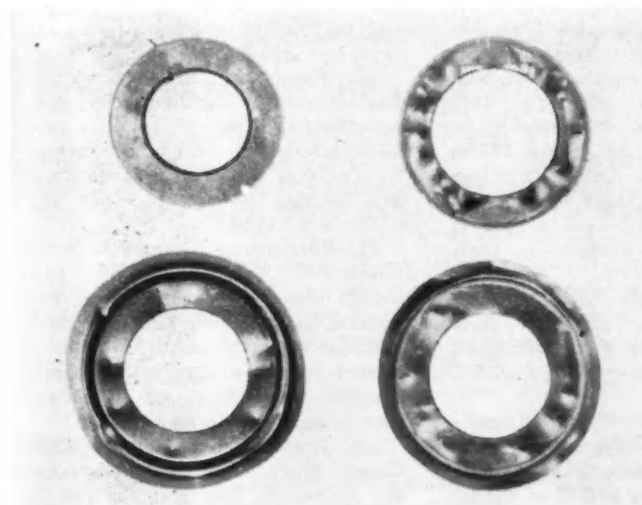
With mixing of different greases, softening has occurred here, permitting shifting of grease in hub



Effect of moisture. Note spattering on collector ring, almost complete movement from bearing

Worn and damaged seals permit escape of grease, entrance of dirt. This damage was caused by carelessness in assembly and disassembly. Seals cannot contain grease in over-lubricated hubs

Grease didn't cause this. Nicked rollers on lower center assembly caused by misalignment in assembly. Fatigue or shock caused abrasion of race at upper right. Top center bearing is also defective





Parts Salvage Sa

TWO DISPLAYS of reclaimed parts, exhibited recently at regional maintenance meetings of the American Transit Assn. in Atlanta, Ga., and Galveston, Texas, gave dramatic proof of the cost savings attainable through reclamation of parts. Parts, illustrated in photos at right and identified in text below were selected by members in attendance as examples of what can be done in this field. Most of the reclaiming was done in the operators' own shops but some was done by outside sources as indicated.

Said one operator of 300 buses: "In a single 30-day period our shop rebuilt 2136 units at a labor cost of \$4,459.12. These same units, new, would have cost \$72,048.96. That's a saving of \$67,489.84 less the small cost of materials used and shop rental time. It still comes out to a 90 per cent saving!"

1. Converter Seal (GMC Model 90). Installed new carbon seal, ground steel washer, lapped two together. Job done for Cincinnati, Newport & Covington Rwy. Co. by Muncie Reclamation and Supply Co., Muncie, Ind. Cost: rebuilt, \$19.50; new, \$34.10.

2. Front Dust Shield Assembly (Timken). Cracks electric welded with 3/16 in. Ni-Rod; ground smooth. Atlanta Transit Co. Cost: rebuilt \$2.30; new, \$71.45.

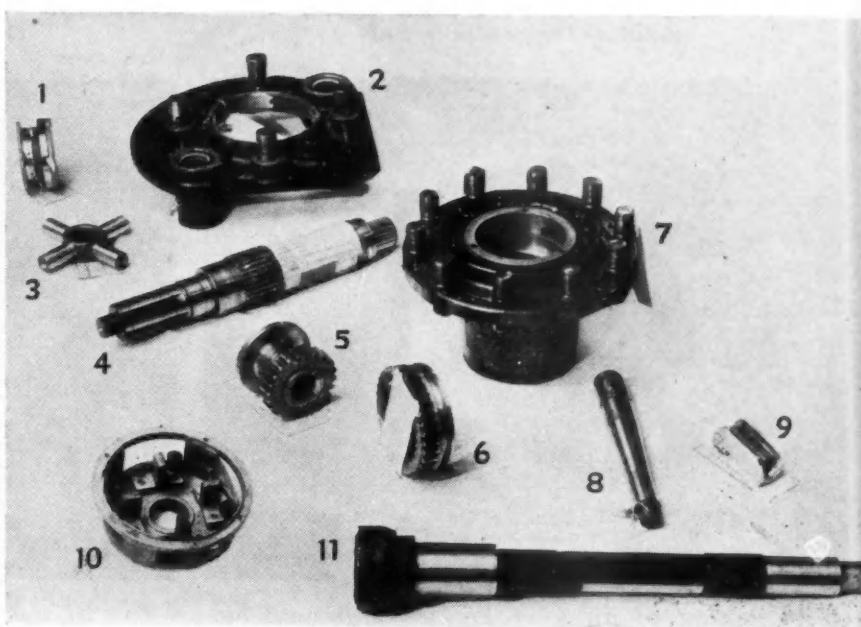
3. Differential Spider. Built up with hard chrome spray and ground to standard. For Cincinnati, Newport & Covington Rwy. Co. by City Tool & Die Co., Muncie, Ind. Cost: rebuilt, \$4.75; new, \$11.30.

4. Main Shaft (White 80BG). Fractured area next to gear (which supports pilot needle bearing) was ground, built up with No. 11 Metco Spray Bond, and ground to finish. Birmingham Transit Co. has had two in operation for more than a year. Cost: rebuilt, \$5.00; new \$53.00.

5. Gear Assembly Shifter (transmission reverse). Outer flange built up by electric welding with mild steel, machined

* These companies, with others in different parts of the country, specialize in parts reclamation. For further details, use postcard at page 78.

Displays of reclaimed parts at ATA Conference



Atlanta group stressed advantages, cost wise, of rebuilding parts

to specification. Memphis St. Rwy. Co. Cost: rebuilt, \$3.37; new, \$34.80.

6. Gear Shifter Output. Flange built up by electric welding with mild steel, machined to specification. Memphis St. Rwy. Co. Cost: rebuilt, \$8.17; new, \$27.90.

7. Hub and Stud Assembly (Timken). Inner bearing surfaces built up with Spray Bond 11-gage wire and ground to specifications. Atlanta Transit Co. Cost: rebuilt, \$7.10; new, \$52.00.

8. Steering Knuckle Pin. Two wearing surfaces built up with Spray Bond 11-gage wire and ground to specifications. Atlanta Transit Co. Cost: rebuilt, \$2.00; new \$5.76.

9. Trolley Shoe (trackless). Runners built up with Tobin Bronze rod (gas welding) using carbon insert to keep inner surface free from weld; milled on special

jig; new inserts installed. Atlanta Transit Co. Cost: rebuilt, 90¢; new, \$1.85.

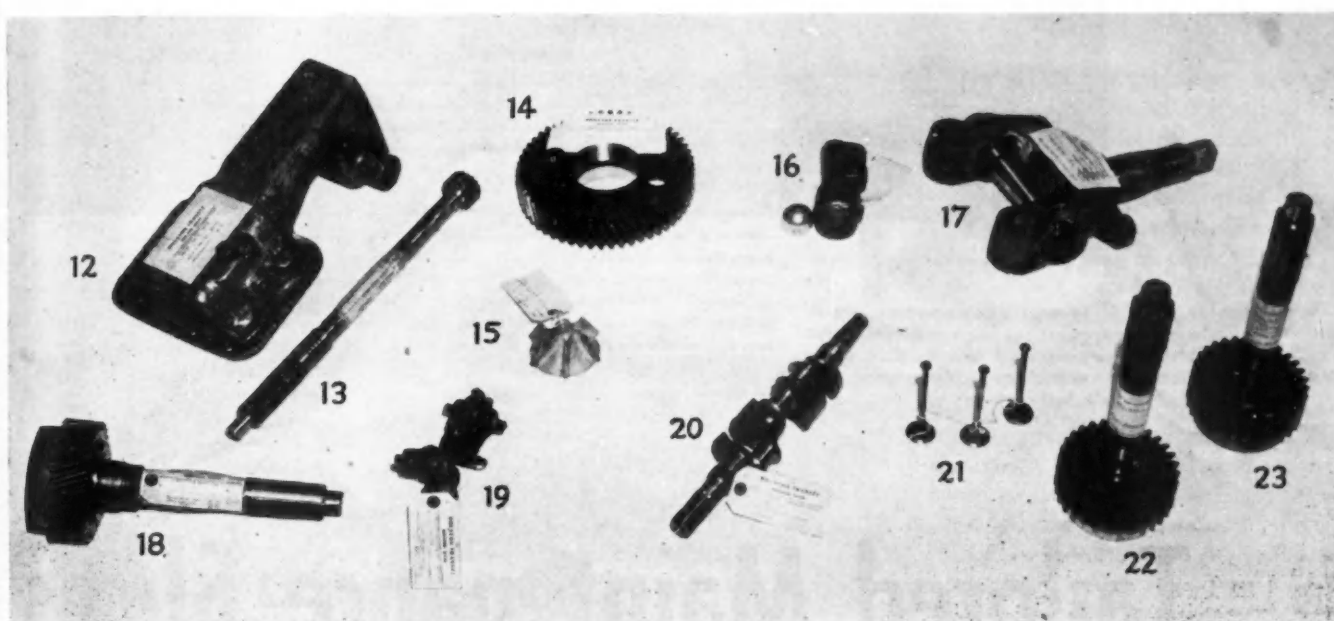
10. Generator Brush End Plate. Bearing seat in aluminum casting wears out-of-round. Bored to 1/16 in. oversize bushing turned to tight fit and pressed in. Bushing then turned to fit armature bearing. Georgia Power Co. Cost: rebuilt, \$2.50; new \$14.00.

11. Suspension Lever Shaft (Twin Coach 41-G). First reclaim; built up with No. 25 Metco carbon spray steel. Second reclaim; built up with Airco No. 387 5/32 electrode (electric weld). In both cases journals ground to standard specifications. Southern Coach Lines, Inc., Chattanooga. Cost: rebuilt, \$8.67; new, \$23.70.

12. Transmission Remote Control Cover (White). Built up by electric welding to provide firm seat for bolt (just

Save Up to 90%

emphasize possibilities in cost savings in restoring worn assemblies



Galveston Conference featured parts reclaimed by welding, grinding, chrome spray

below label). Provided permanent seat and eliminated need for set screw on side. Houston Transit Co. Cost: rebuilt, \$4.48; new, \$39.07.

13. **Torque Converter Through Shaft.** Splines built up with electric welding, machined, milled and hardened. Houston Transit Co. Cost: rebuilt, \$2.00; new, \$33.46.

14. **Transmission Gear and Race Assembly (White).** Built up inner bearing surfaces and machined to standard. Houston Transit Co. Cost: rebuilt, \$3.48; new, \$129.42.

15. **Water Pump Impeller (Twin Coach).** Built up wear points on inside with No. 16 Eutectic rod. Fort Worth Transit Co., Inc. Cost: rebuilt, \$2.00; new, \$8.66.

16. **Tie Rod End (White).** Built up socket area by brazing; then pressed in steel ball of proper size with 75 ton pressure. No machining necessary. Houston Transit Co. Cost: rebuilt, 75¢; new, \$8.08.

17. **Steering Knuckle (Twin Coach 44-S).** Built up bearing surfaces with Fleetweld No. 5 rod; machine to standard. Also rebushed at pin. San Antonio Transit Co. Cost: rebuilt, \$7.78; new, \$76.68.

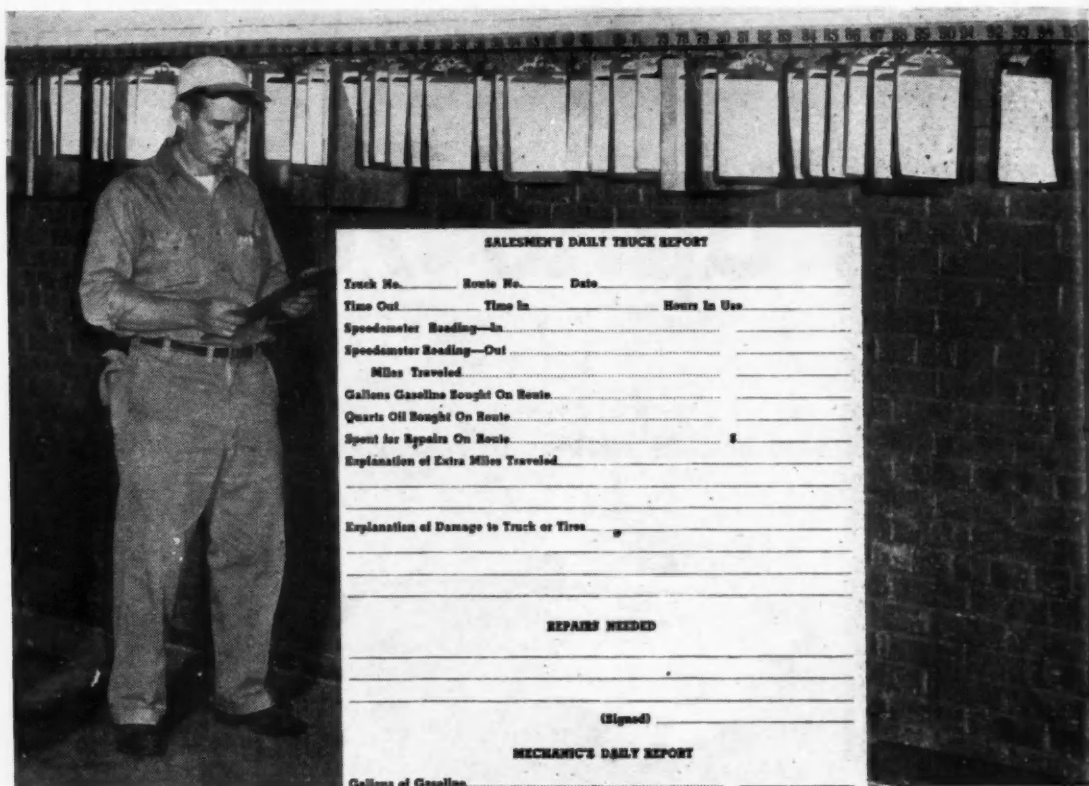
18. **Transmission Drive Gear (White).** Spline area built up solid by electric welding, then machined, milled and heat treated. Houston Transit Co. Cost: rebuilt, \$9.86; new, \$57.94.

19. **Accelerator Hydraulic Unit (White).** New shaft and bushings. Houston Transit Co. Cost: rebuilt, \$1.54; new, \$17.93.

20. **Air Compressor Crankshaft (White).** Reworked spline at drive end similar to No. 18 above. Houston Transit Co. Cost: rebuilt, \$6.57; new, \$36.23.

21. **Valves (all makes and models).** Ground valve face concave, built up face and stem with Stooddy No. 6 self-hardening rod, refaced valve and trued stem. *This is only rebuilding operation described which costs more than new parts, but it has tripled average valve life through hardening stems and seats.* San Antonio Transit Co. Cost: rebuilt, \$2.12 each; new, variable.

22 and 23. **Gear, Clutch Drive (White).** Built up separate splines and bearing surface with Stooddy High Carbon rod, aligned, machined, milled and quenched. San Antonio Transit Co. Cost: rebuilt, \$12.54; new \$61.37.



Control center for PM system encompasses a wall file with clipboards representing each vehicle. Form 1. Salesman's daily report and mechanic's daily report, inset, provide pertinent information for foreman's later check

SALESMAN'S DAILY TRUCK REPORT			
Truck No. _____	Route No. _____	Date _____	
Time Out _____	Time In _____	Hours In Use _____	
Speedometer Reading—In _____			
Speedometer Reading—Out _____			
Miles Traveled _____			
Gallons Gasoline Bought On Route _____			
Quarts Oil Bought On Route _____			
Spent for Repairs On Route _____		\$ _____	
Explanation of Extra Miles Traveled _____			
Explanation of Damage to Truck or Tires _____			
REPAIRS NEEDED _____			
(Signed) _____			
MECHANIC'S DAILY REPORT			
Gallons of Gasoline _____			
Quarts of Oil _____			
Pounds of Grease _____			
Quarts of Anti-Freeze _____			
Cost of Repairs from Work Sheet _____		\$ _____	
Date of Oil Change _____			
Date, Make and Number of Tire Change _____			
Tire O-S-87C-1113		(Signed) _____	

Tailored Maintenance Slices

Streamlined PM program is geared to fit driver and his route.



The home of Kleen-Maid bread, A typical Alstadt & Langlas truck shown at the garage exit of this bakery

IN THE bakery business our costs are already sliced up for us. All we have to do is to take a loaf of bread and allot a few slices to production, a few more to delivery, sales, overhead, heat and taxes and hope there's a slice left for the owners. Each loaf must contain enough slices to go around. When one department gets more slices than it should, we must revise, reevaluate or otherwise rearrange to correct the situation.

With this article we are concerned

principally with the slices taken of the loaf to deliver our bread and keep trucks in condition. Alstadt & Langlas bread goes through when the mail can't make it.

How to manage this department so that it does not take more slices than it should depends upon consideration of certain definite aspects. For instance, we have six months of bad weather; 50 per cent of our routes are on gravel roads which get pretty rough during winter months. These

Tailored Maintenance . . .

Continued from Page 65

make lots of stops—this means a lot of work for the clutch but not many miles. Others travel long distances on graveled roads.

More than 50 per cent of our routes are on gravel roads. The combination of bad weather and bad roads increases the wear on brakes for one thing as well as a lot of other extra wear. Fine sand gets into the drums, and it is money in pocket to keep out as much as we can.

Fighting this problem has led to the use of a special metal ring for the rear wheels of our trucks to keep out the sand and water. This has increased mileage on our brakes considerably and naturally our drivers have had better brakes.

Last winter the conditions were so bad on one route that we had to lubricate the truck every night. This truck made a 113-mile trip daily; it was lubricated and checked before leaving but would be so tight when it returned that it was very hard to steer. Such things make it easy to see the advantages of scheduling service for trucks to suit conditions.

Streamlined Record System

TO cut down on needless paper work we have put our truck records on a 13-week basis instead of the usual 30 days, with four totaling periods a year instead of 12.

Elimination of monthly maintenance and operating cost totals and the conversion of our printed forms to four 13-week periods per year, has reduced our record-keeping cost in this department more than one-third without reducing its efficiency.

One third less printed forms were needed. One full-time bookkeeper was eliminated. We also saved much time and lost motion formerly required for handling and originating information and duplication of work.

Totals go only to master records which thus have four entries per year instead of 12 from these departments. The shop foreman supervises printed form completion as he lays out and checks the progress of work.

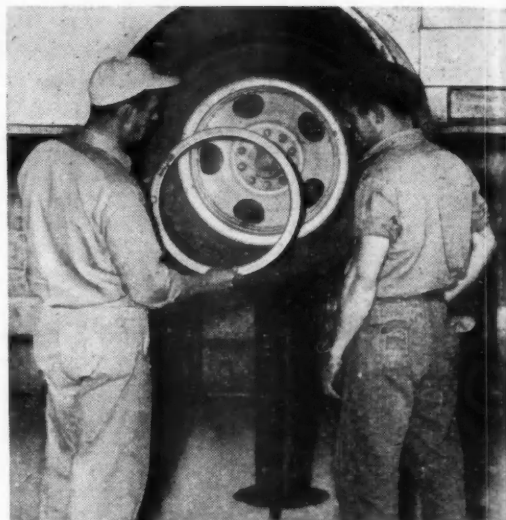
The heart of our record system in maintenance and service is the Sales-

(TURN TO PAGE 92, PLEASE)

Right. B. F. Lane, shop foreman, shows how to install special mud ring to keep sand out of drums

Center. Another shop-made device is this adjustable seat made from a brake drum and a mechanical jack. Seat is used for brake work

Bottom. Lubrication is set up to meet the needs of the route and weather conditions. Ordinarily a truck is lubricated every two weeks. Under rugged conditions it may be lubricated and checked daily



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A Critical and Independent Analysis of The Maryland Road Test

It has been 14½ months since the last truck ground to a stop in the project known officially as Road Test One-MD. In all those months trucking interests have waited—perhaps too patiently—for the official results. None have been forthcoming. Yet during that interim many anti-truck interests—most notably Governors Dewey of New York and Fine of Pennsylvania—have used their own interpretation of the "results" in bitter attacks and damaging legislation against the truck industry.

In all the 14½ months of waiting **COMMERCIAL CAR JOURNAL** has kept in constant touch with the sponsors—officially The Highway Research Board and, indirectly, the Bureau of Public Roads—stressing the need for a prompt and all-inclusive final report. As this issue went to press we made a final plea. But still there was no approved report.

Meanwhile William S. Housel, Professor of Civil Engineering, of the University of Michigan, working in conjunction with the Fruehauf Trailer Co. has just completed a special independent report on his findings. Prof. Housel is considered a leading expert in soil mechanics, served as Commander in the Navy in charge of airport design, particularly with regard to pavements, and has acted as consultant for many State Highway Depts.

Unfortunately the Housel report is too long and too complex for publication in this magazine. But **COMMERCIAL CAR JOURNAL** is proud to present the accompanying staff written article incorporating, for the first time in any publication, the basic concepts of the Housel report.

While the report does not carry the approval or sanction of the sponsoring bodies, we believe that the data will be of great assistance to the fleet operator in understanding the controversial issues involved, and at a time when he needs these data most.

A limited number of copies of the full Housel report are available. Please address your requests to—

The Editors

ANTI-TRUCK interests, capitalizing on incomplete "results" of the Maryland Road Test released thus far, almost invariably lead off with the premise that the heavier axle loads developed far more cracks than the lighter loads. "It is thus obvi-

ous," these interests say, "that heavy trucks beat up the roads and ought to be ruled or taxed off the highways."

When confronted with the problems of sub-soils and other data, these same folks are likely to follow through

with this all-too-often convincing punch:

"OK. So the sub-soils were not what they were supposed to have been. But the test road was in reasonably good condition and is typical (TURN TO NEXT PAGE, PLEASE)

Fig. 1 Test Off to Uneven Start

Official pre-test data reveal tandem strips 50% longer; lanes carrying heavy loads had pre-test cracks three times as long

SECTION	I	II	III	IV
Axle loading (lb.)	18,000	22,400	32,000*	44,800*
No. of Slabs	51	51	72	72
Total length (ft.) of cracks before test	22.2	60.4	36	104.7
Length of cracks at end of test	241	1210	307**	3303**

Note: Sections I & II were side by side at south end.

Sections III & IV were side by side at north end.

*Tandem axles **As of Oct. 13 (end of Sect. 4 test)

cal of the majority of American highways. On similar and parallel sections of the test road, and under controlled conditions, the heavier axle loads developed far more cracks than the lighter loads. I saw it with my own eyes and that's good enough for me!"

That would be a telling argument if it were true. But the facts prove definitely that the test strips were not at all similar. In his independent report on the test, Professor William S. Housel brings out these important differences.

Test Strips Not Similar

1. Both sections carrying the heavier loads had many more cracks *before the test began* than did the parallel strips carrying the lighter loads.

2. Sections III and IV carrying the tandem axle loads were approximately 40 per cent longer than Sections I and II, yet this purely mathematical difference is seldom considered when results are quoted.

3. Based on preliminary soil tests, it is apparent that both Sections I and II carrying the single axle loads had at least some good granular sub-soil under the slabs, while virtually none of Section III and IV had high-type sub-soil. Where the sub-soil was good, *no new cracks were developed*.

4. Because of these differences in the characteristics of the test strips themselves, it was only natural that the heavier loads should show more damaging effect, particularly when coupled with the fact that—

5. Test procedures created ruts at the side of the pavement that provided a most effective means of providing water beneath the slabs.

6. There was practically no effective maintenance throughout the test, thus further aggravating pumping conditions, particularly on the sections containing the heavier loads.

7. There was extraordinary rainfall during September—10.5 in. compared with average of 3.5 in. This, of course, aggravated pumping conditions.

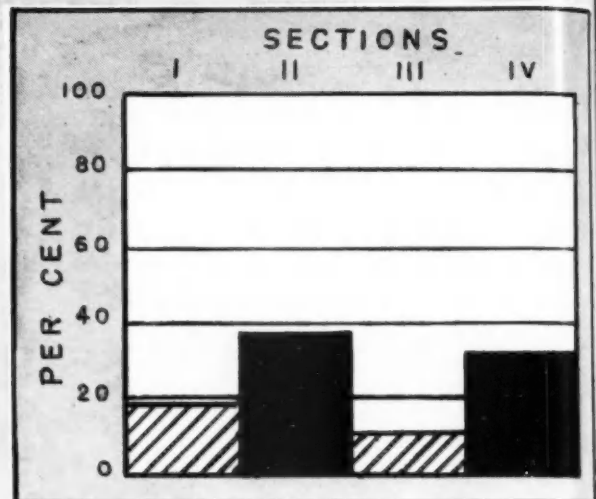
It is our purpose here to develop each of these seven points with data provided from both official reports of the Highway Research Board and the Housel report.

1. Pre-Test Data

Fig. 1, taken from official reports of the Highway Research Board and previously published in *COMMERCIAL CAR JOURNAL*,* provides the clue for the first two points. This table also serves as a refresher on the basic layout of the test. Note that *before*

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Housel report sums up some pre-test inequalities:

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Also from Fig. 1 the reader can establish the undisputable fact that Sections III and IV, carrying the tandem axle loads, were approximately 40 per cent longer than Sections I and II. Yet this fact is seldom considered when comparing "results" in terms of crackage.

"Although the answer can never be known," says Prof. Housel, "the question naturally arises; what would the results have been had the heavier axle loads been run over the shorter sections which included the granular

* July, 1950, pp. 54; September, 1950, pp. 64; February, 1951, pp. 64

Fig. 3 After-Test Cracks

This Housel graph shows similar distribution of new cracks after approximately 180,000 load applications

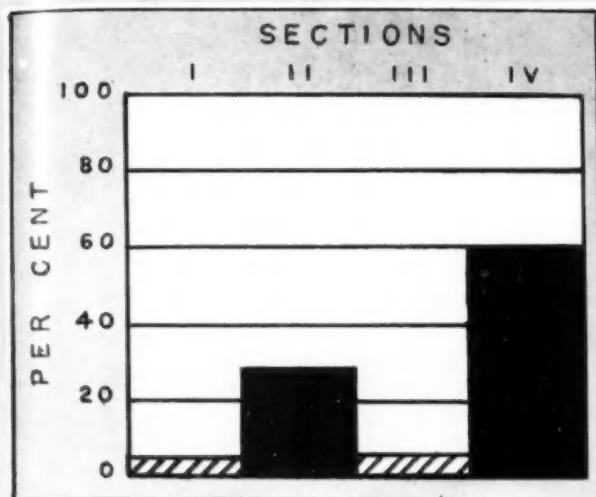
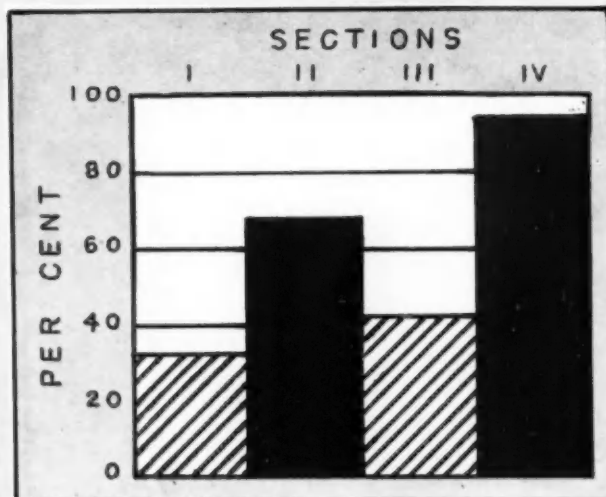


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Housel report shows how uncontrolled pumping (in % of slabs relates to crack pattern developed during test



points out that there were no new cracks on any slabs laid over good sub-base

subgrade?" The same doubt arises concerning the possible transposition of loads on each of the parallel strips.

3. Dissimilar Sub-Soils

No one regrets more than either Professor Housel or COMMERCIAL CAR JOURNAL that official sub-soil tests taken under the pavement have not been released. But from official tests taken along side the slabs it now appears evident that only 15 slabs on each of Sections I and II had sub-soil of the type generally classified as high grade granular, while none of the slabs in either Section III or IV had this type. Thus for fair comparison it is important to eliminate the slabs laid on granular subbase and compare only the slabs laid on similar types of soil.

This Professor Housel has done in Fig. 2 which shows the comparable cracking, in percentages, in each sec-

tion over similar subgrades *before the test began*. Note again the markedly higher percentage in Sections II and IV. Now compare this same Fig. 2 with Fig. 3, also from the Housel report, showing *new crack* percentage at a point when each of the four sections had had approximately 180,000 axle load applications during the test procedures. Note that the pattern is exactly similar to the pattern created before the test began, save only that percentages on the heavier axle sides are higher. It is vitally important to analyze these differences further.

4. Pumping Leads to Cracking

It has long been established that it takes four elements to create pumping on a highway. These elements are in briefest form:

1. Water soluble sub-soil.
2. Water beneath the slab.

3. A slab with rigidity and deflection characteristics capable of providing the pumping action.

4. Continuously heavy loads.

It is obvious that the Maryland Road Test had all four in profuse proportions. But just how profuse those proportions were has seldom been discussed. In Figs. 4 and 5, Professor Housel has shown the degree of edge pumping and joint pumping during the month of September—a period in which there was 10.57 in. of rain. Note again the marked relationship between these charts on pumping both between the crackage prior to the test (Fig. 2) and after the test (Fig. 3). These charts are shown particularly to establish the relationship between pumping and cracking—a point on which Professor Housel dwells at great length.

Why was there so much pumping?

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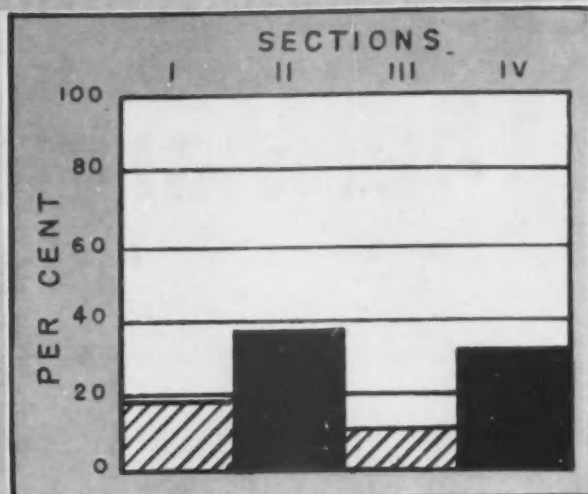
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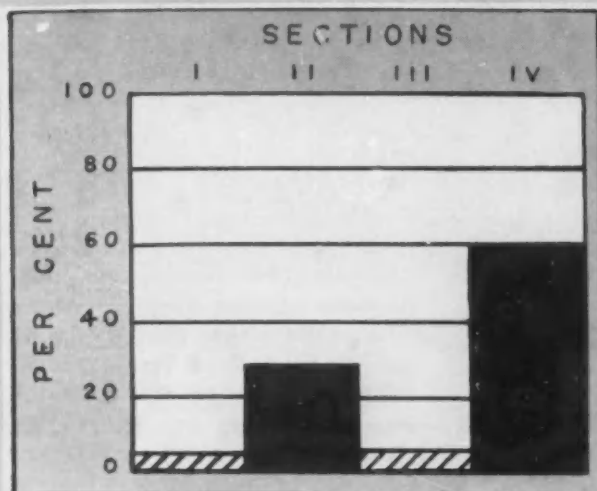
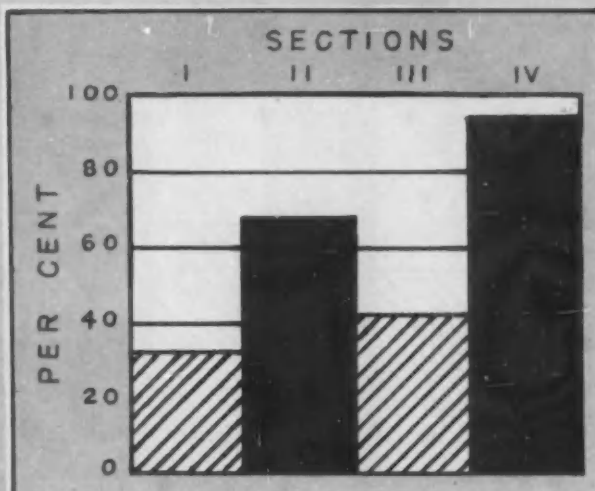


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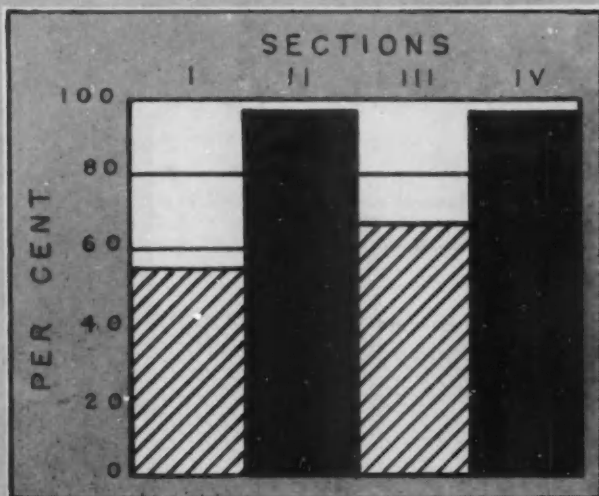
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Why was there so much pumping?
(TURN TO NEXT PAGE, PLEASE)

Fig. 5 Joint Pumping During Test
Joint pumping followed similar pattern but continued longer as result of unusual rainfall during test period



5. Troughs at Edge of Road

One of the peculiarities of the test procedure was the fact that pre-test data indicated that approximately one heavy vehicle in five travels near the edge of the slab, while others travel a few inches in from the edge. Thus, elaborate mechanical counters were set up to provide that every fifth run would be at the edge of the slab. Unfortunately, at the start of the test inexperienced drivers in their zeal to drive at the edge, went over the edge and established deep ruts running the length of all four sections. While the shoulders were periodically scraped, the damage had been done. In Professor Housel's words: "This condition promoted infiltration of water to the subgrade which it would have been difficult to have more effectively accomplished had the troughs been designed for that purpose."

This conclusion is further amplified by the extraordinary fact that with minor exceptions there were no new cracks on any of the slabs adjacent to any of the turn-arounds despite the fact that these slabs car-

ried double the traffic load—or approximately half a million axle applications. Two of the turn-arounds carried all the traffic from Sections I and II while the other two carried all the traffic from Sections III and IV.

The only difference between these slabs adjacent to the turn arounds and other slabs in the test was that the turn-arounds themselves, built of asphalt, provided a water-tight seal at the edges. In addition these asphalt sections were slightly higher than the concrete, thus providing a natural water drain across the slab. Says Professor Housel:

"While the practicability of protecting a concrete pavement from infiltration of water at the edge may be debated, the fact remains that such protection at the edges of the turn-around was apparently quite effective. One other point may also be noted and that is the fact that the traffic pattern at the turn-arounds was such that the wheel load applications were not along the edge of the slab."

6. No Effective Maintenance

This leads directly to the question of whether or not there was effective

maintenance. The Highway Research Board has reported factually just what was done. This included periodic scraping of the shoulders, plus filling of open cracks with asphaltic materials. But the point to remember is that this maintenance was not effective. Pumping continued and as long as pumping continued, cracks continued. Again quoting Professor Housel:

"If a house had a leaky roof it would make little difference how many times repairs might have been attempted unless those repairs stopped the leak. At the times which this writer had the opportunity to inspect the Maryland Road Test it can be unequivocally stated that the maintenance employed was almost completely ineffective."

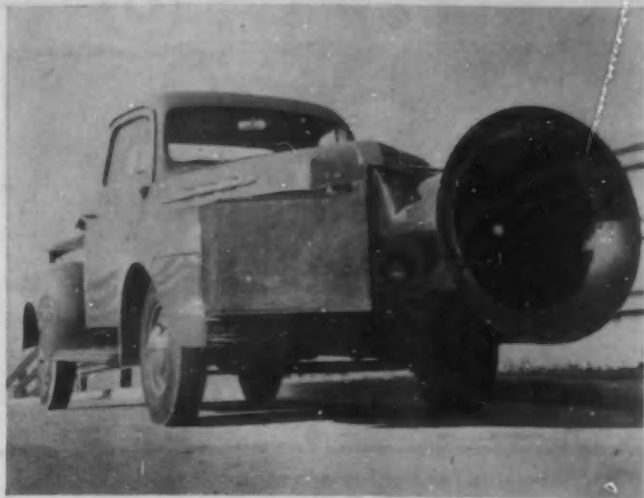
7. Three Times Normal Rainfall

On top of that came the extraordinary rainfalls in September totaling 10.5 in. This compares with a normal in the area—even for September—of 3.5 in. It is interesting to note that after the rainfall was over, edge pumping decreased proportionally on all four sections, while transverse pumping continued to increase. "This," says Professor Housel, "would indicate that once a reservoir for holding water had been created beneath the slabs and this reservoir filled, it required less replenishment to maintain continuous joint pumping than was the case at the edge of the slab where a more effective outlet for water was available."

Conclusions

Now let's get back to those opening remarks by the anti-truck interests. We can hear them say "OK, so there was a difference in the strips before the test began, but the heavy loads increased that difference by a substantial margin."

That's true. But the point to remember is that it takes four elements (see above) to cause pumping, and pumping causes cracking. If the test were to have been a real test of heavy loads, the other three elements should have been controlled—at least by fair and reasonable maintenance that would be normal during the simulated period of many years of traffic flow which the test created. This was definitely not the case. And any "results" quoted from the test should make that point telling clear.



▲ A detachable snout on this Ford F-1 truck helps research engineers determine facts about air flow, fan and radiator performance at a test track maintained by Ford Motor Co. at Dearborn, in an expanded vehicle study program



▲ Students at the DeVilbiss Co. school of spray painting stop proceedings to ask questions on the spray gun they are disassembling. They were among the mechanics attending a one-week course in the use and maintenance of spray guns and air compressors made by DeVilbiss

Police in Cincinnati, Ohio, give credit for the city's safety improvement record to this "Demonstration Safety" campaign which the police have been sponsoring. Drivers are invited into this specially-equipped Trailmobile trailer to test their reactions to various highway problems

▲ A safety barometer keeps drivers and staff of the Silver Eagle Co., Portland, Ore., safety minded. For each day that passes without an accident, the dial is moved ahead. It returns to the zero position when there is an accident, and the record is marked with a colored sticker



PICK D pix OF INTEREST TO FLEETS



▲ Provisions are dropped by helicopter for crews building a 365-mile railroad in Quebec, as one of the contractor's fleet of GMC trucks stand by to continue the supply hauling job. The railroad will serve iron mines located in the area





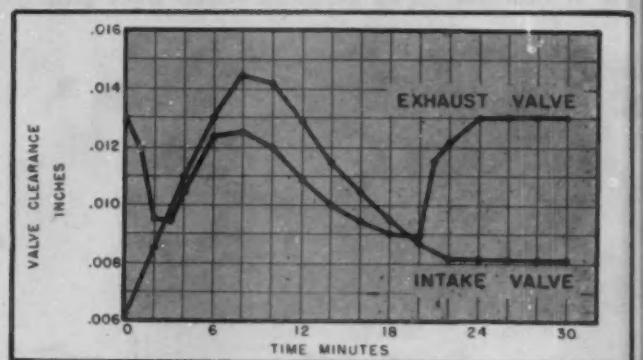
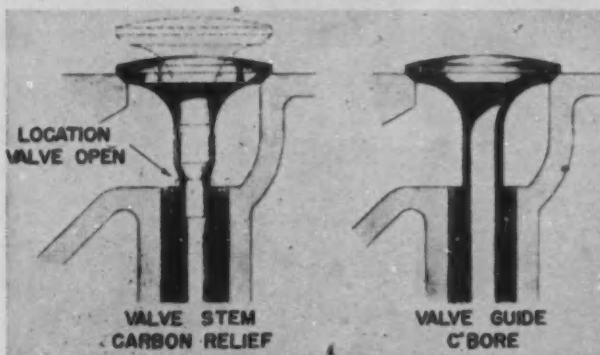
OUTSIDE DIAMETER	INSERT DEPTH	INTERFERENCE FIT
0 - 1	0 - $\frac{1}{4}$	.001 - .003
1 - 2	$\frac{1}{4}$ - $\frac{3}{8}$	.002 - .004
2 - 3	$\frac{3}{8}$ - $\frac{9}{16}$	.003 - .005
3 - 4	$\frac{9}{16}$ - $\frac{11}{16}$	.004 - .006

Here's where wear may develop to reduce efficiency

Interference fits for hard cast or wrought inserts

Guide counterbore and carbon relief cut stem deposits

Effect of warm up on lash setting in overhead engine



Help Yourself to Better V

Careful inspections, precision fitting practices, accurate adjustments

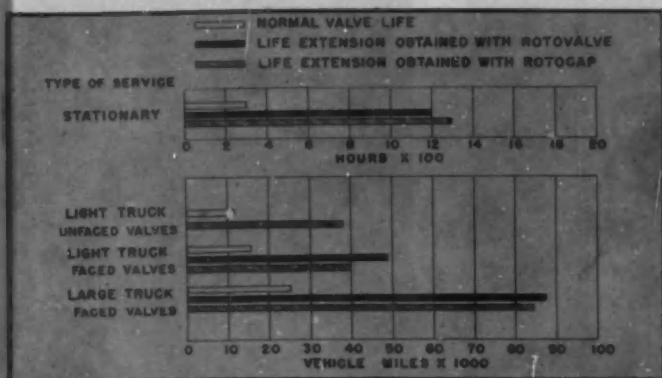
AT THIS point, we are mainly interested in the inspection of the units in the valve trains. Two common wear points are the rocker arms and tappets. A depression in the tappet screw or in the rocker arm face, if not corrected, will give erroneous tappet clearance readings. The actual clearance will be on the plus side and can contribute to valve

breakage. The first signs of tappet-screw or rocker-arm wear can be noticed on the valve stem tip. The edges of the chamfer, which are normally sharp, will be round. The corrective measure to be taken is to regrind the worn surface to make it conform to its original contour, thus providing for the proper feeler gage reading. In cases of extreme wear,

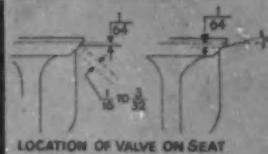
replacement of the tappet screw or rocker arm may be necessary. While observing the wear on the tappet adjusting screw, it is also good practice to note the conditions of rocker arm bushing and the tappet face. Extremely worn bushings or scuffed tappets should be replaced.

The next item to be checked is the valve guide. Since guide wear is

REFERENCE
T
- .003
- .004
- .005
- .006



FITTING the VALVE to the ENGINE



STEM DIAMETER	CLEARANCE	
	INTAKE	EXHAUST
5/16"	.002	.003
11/32"	.0025	.0035
3/8"	.003	.004
7/16"	.0035	.0045
1/2"	.004	.005

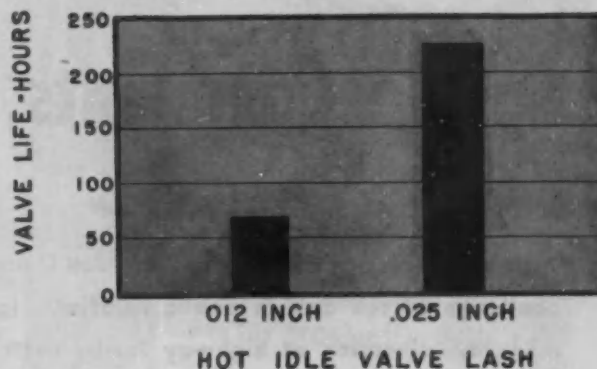
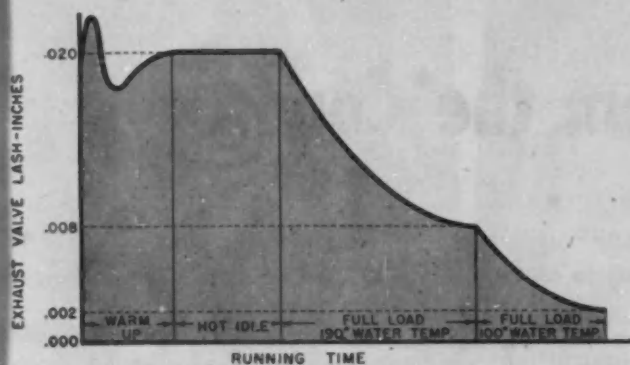
GUIDE CLEARANCE

Rotation extends valve life from two to five times

Use these specifications in fitting valves to engine

Effect of operating conditions on exhaust valve life

Insufficient clearance reduces life to as little as 25%



er Valve Life

By J. A. Newton and Norman Hoertz*

Thompson Products, Inc.

sodium cooling, rotation recommended

usually in the form of bell-mouth on the ends or directional wear, which makes an oval out of the inside diameter, it cannot be accurately measured with a plug gage. A more accurate device is the small hole gage. Both the tapers and the amount of oval can be easily taken from the guide and transferred to a standard micrometer. Some gage

manufacturers also have available a direct-indicating dial gage. These, of course, are more expensive, but do offer a convenience.

Guide wear should be taken seriously because it affects the over-all valve temperature. As the guide clearance is increased, there is less contact between stem and guide, and likewise less heat conductivity, giving

a temperature rise in both the valve stem and head. The higher clearance also allows movement of the valve on the valve seat insert, causing wear and gas leakage, factors that contribute to valve burning, loss of compression, and power.

We come next to the valve spring. There are actually 5 points to be observed: (1) Wear on the block usually comes from high-speed operations, where the springs rotate and produce grooves. (2) The same wear may or may not appear on the spring caps. Occasionally, we have

(TURN TO PAGE 116, PLEASE)

*—Excerpted from a paper presented at the SAE Annual Meeting in Detroit, Jan. 14-18

COMMERCIAL CAR JOURNAL, March, 1952



Winners of the Council's safe driving awards. Left to right: A. G. Ulmer of C. Schmidt & Sons; C. S. Kelly of Dairyman's League Coop. Assn.; T. A. Drescher of the Borden Co.; F. A. Phinney of National Biscuit Co.; John G. Schinka of Armour & Co.; E. J. Ruh of Southern States Coop. Assn.



E. D. Bransome, president and chairman of the Board, Mack Trucks, Inc., featured speaker of the closing luncheon, talks with T. A. Drescher, Council President

Capsule Comments from the Council

National Council of Private Motor Truck Owners girds to meet challenge of the day in public relations, lashes out at ton-mile tax, diversion of highway funds, restrictive legislation

NEARLY 350 delegates met in Washington, February 7 and 8, to attend the 13th Annual Meeting of the National Council of Private Motor Truck Owners, Inc. The record attendance was matched by a two-day program dotted with reports and panel discussions high on the list of musts for the private vehicle operator. Thursday's sessions were devoted to speakers covering such problems as taxation, highways, equipment and public relations. The next day found various leaders discussing legislative issues, ICC leasing and safety rules, highway safety programs, driver education. E. D. Bransome, president of Mack Trucks, Inc., closed the sessions with a fiery message to fleetmen from the standpoint of public relations. His 5-point suggestions for alleviating the present crisis in U. S. highways covered: 1. reminding the people and legislators that efficient use of autos and trucks depends on adequate highways, 2. insistence that

this country look ahead and build roads to meet the traffic demands of modern commerce, 3. insistence that roads are tools and must be engineered to do the job they are required to do, 4. pointing out that since roads are tools they must be expected to wear out, 5. insistence that highway funds should be used for highways and not diverted.

Theodore A. Drescher, Council President, in an address to the group, voiced similar recommendations, saying, "We should resolve our position as swiftly as possible, get into the scrap at the national and local levels, and endeavor to influence legislation that will preserve the inherent advantages of all types of transportation in the interest of better service to the public at the lowest possible cost. If we do not do this, it will surely be done for us by others less expert and informed than we are, and we shall have to answer to industry for the increased burden of cost and the

onerous regulations that will be saddled to our economy."

K. M. Russell, of American Trucking Associations, suggested a practical approach to improved public relations. Tell the people *why* your truck is on the road, he said; show them the service you provide, and the motorist will appreciate your work. In this respect he recommended use of signs and decals on the vehicle indicating the type of service the truck is rendering. Thus, signs on a delivery vehicle on a narrow city street should point out that it is there to serve the public. A large fuel oil truck parked in front of a home, properly identified, will emphasize the necessity for that vehicle being there. When the public realizes that the truck is on the road or the street to provide service, goods, necessities of everyday life, people will accept them without bias, he stated.

Gorman Raps Diversion

TRUCKS, along with other highway users, have in many states been the victims of short-sighted tax policies with the result that the highway user has not been getting his money's worth, said A. B. Gorman, of Esso Standard Oil Co. One of the means

(TURN TO PAGE 154, PLEASE)



Announcing Sealed Power **Kromex**

Chrome-Faced, Chrome-Alloy
Top Compression Ring



Note Mechanical Interruptions

This cross-section micro-photograph shows solid chrome face, factory-lapped to a light-tight finish for quick seating, and mechanically interrupted for extra oil-carrying capacity. Sides of ring are Granosealed for quicker seating and greater flexibility.

All rings in Kromex RING SETS are beveled, tapered, or finished to thread-line contact for quick seating and blow-by control.



MD-50 STEEL OIL RING

Now Better Than Ever!

NEW: Chrome-faced rails for double mileage!

NEW: Granosealed rail sides for greater flexibility!

The only ring with the
FULL-FLOW SPRING!

Repeatedly proved best for
OIL CONTROL

EVEN IN
**BADLY TAPERED
AND
OUT-OF-ROUND BORES**

- CAN'T BLOCK ANY PISTON OIL HOLES!
- CAN'T BLOCK ANY RING SLOTS!
- TWICE THE USUAL BEARING AREA for easier starting and longer life!



A PREMIUM SET FOR LATE-MODEL CARS AND TRUCKS!

SEALED POWER CORPORATION, MUSKEGON, MICHIGAN

Sealed Power Piston Rings

BEST IN NEW TRUCKS

BEST IN OLD TRUCKS

COMMERCIAL CAR JOURNAL, March, 1952

If Your Brakes Are Costing You Money...

THESE TRUCKS ARE BACK
FOR ANOTHER BRAKE JOB—
WHAT GIVES?

THE POWER BRAKES JUST
AREN'T BIG ENOUGH TO
HANDLE THE LOADS WE CARRY!



Are your power brakes designed for your trucks or for the loads you carry?

Naturally, they should be matched to the load. For example, if a 2-ton truck is hauling at rated capacity, it can probably get by with the power brakes it has. But, if that same 2-ton truck is hauling heavier loads, or running on hilly or rough terrain, the chances are it needs "stepped-up" power braking.

You can easily spot under-braking on your trucks! If your linings are wearing too fast . . . if your trucks are hard to stop . . . if your drivers are complaining, it's time to see your Bendix* Vacuum Power Brake dealer about Load-Rating your brakes.

Only Bendix* Hydrovac* has a range of models wide enough to let you pick a power brake to exactly fit your load. It's Load-Rated!

*REG. U. S. PAT. OFF.

Bendix SOUTH BEND

PRODUCTS DIVISION INDIANA

Export Sales: Bendix International Division, 72 Fifth Avenue, N. Y. 11, N. Y. • Canadian Sales: Bendix-Eclipse of Canada, Ltd., Windsor, Ontario, Canada



It's Time to
MATCH the BRAKING
to the LOAD with
Bendix
HYDROVAC
THE
"Load Rated"
POWER BRAKE!

A MODEL FOR EVERY LOAD FROM ½ TON TO THE BIGGEST!



THE TONNER

THE SPECIAL

THE STANDARD

THE SUPER

THE ATLAS

THE MOGUL

THE DREADNAUGHT

Free

PUBLICATIONS

FOR YOUR CONVENIENCE USE THE POSTCARD ON NEXT PAGE

L130. Air Brake Manuals

Wagner has developed a new series of Air Brake Maintenance Bulletins for use by repair shops, fleet owners and maintenance men. The series consists of individual maintenance bulletins, each devoted to a single unit or closely related unit of the Wagner Air Brake system. The completed series will constitute one master maintenance manual covering all phases of maintenance for every unit in the system.

To date eight of the bulletins have been released, and it is planned that the others will follow as quickly as production facilities permit. They are being published with regard to the importance of the unit to the system and the need for information concerning this unit as prompted by inquiries from the field.

The bulletins are simply written with a minimum of technical terminology and profusely illustrated with cross sectional, exploded and schematic drawings that explain every phase of the operation and maintenance of the unit. Write L130 on the postcard for your copies.

L131. Electrode Chart

A new electrode-selector chart, listing the proper electrodes to be used in the welding of various metals, has been announced as available from the General Electric Co. The new bulletin is designed to present up-to-date condensed information on recommended electrodes for the welding of mild steel, stainless steel, low hydrogen-low alloy

steels, low alloy-high tensile steels, cast-iron, bronze and other metals.

Write L131 on the postcard for your copy.

L132. Hot Spray Data

To meet the fast growing interest in hot-spray refinishing, thin 8-page pocket size booklet, has just been published. The booklet entitled "Hot Spray of Automobiles" offers a brief discussion on the theory and practice of the hot-spray method as applied to automotive refinishing. The booklet points out that the hot-spray process is a result of intensive development and experimental work by both equipment and paint manufacturers. It is the most important new development in refinishing in recent years. When adapting this widely used industrial method to autobody refinishing, the booklet provides body shops with essential information about change of technique required from cold-spray auto refinishing practices. Copies of this booklet can be had by writing L132 on the postcard.

L133. Trouble Shooting

New and revised editions of the well known booklets, "Clutch Troubles and Their Cures" and "Modern Brakes" have been published by Russell Mfg. Co.

"Clutch Troubles and Their Cures" is an 11-page booklet, well illustrated with sketches and pictures of the popular types of clutch assemblies.

"Modern Brakes," a 28-page booklet, is a guide to the fundamentals, operating principles and adjustments of brakes. It contains a message of particular interest to the automotive trade

on the subject of drum scoring and good shop practice.

Copies are available by writing L133 on the accompanying postcard.

L134. Color Chart

A new wall chart for fleet owner color selection is now being distributed by Sherwin-Williams. Designed to help refinishing shops sell more truck repainting jobs, the chart displays 54 factory-filled, ready-mixed colors for commercial vehicles. Color matches for all the most popular original truck standard colors are included.

Copies may be obtained by writing L134 on the postcard.

L135. Diesel Data

Fuel savings of Cummins diesels over gasoline engines can be easily calculated in dollars on a cost comparator prepared by Cummins Engine Co. This handy slide-rule type calculator will allow the power user to determine the yearly savings that can be realized through the use of diesels for all types of applications. The cost comparator is based on fuel savings experienced by operators.

For the truck owner, one scale is on a mileage basis. Diesel fuel-gasoline price differential, as well as the increased miles per gallon. The reverse side of the slide-rule shows savings on an hourly basis for industrial and marine power users. The price differential and the decreased full consumption are used for determining the savings.

Write L135 on the postcard for your copy.

NEW Products

ADDITIONAL DETAILS AVAILABLE UPON REQUEST VIA POSTCARD



P159. Trailer Lock

A locking ring that fits all standard fifth wheel pins has been introduced by Bartlett Trainer Corp., Chicago. Two hinged sections are clamped over the pin ridge and a hardened steel keylock fits into the ring hole. In this way, the manufacturer states, loaded trailers may be safely parked or left on the highway in the event of a breakdown without fear that the entire unit with its cargo will be carried off.

P160. Parts Washer

A bench-type parts cleaner in which the circulating solvent flows through the brush has been developed by Graymills Corp., Chicago, Ill. The unit consists of a 20-in. square tank, 4 in. high covered by a wire screen. A solvent pump drives the fluid through a hose to a hollow-shaft nylon or bristle brush for scrubbing the parts over the screen. A soak tank is large enough for a complete carburetor assembly.

P161. Floodlights



A portable floodlight has been designed by R. E. Dietz Co., Syracuse, N. Y., to meet the particular needs of a garage or shop operation under lifts or in repair or grease pits. The light has a 150-w bulb, and a lens which produces a diffused beam in the work area.



P162. Battery Charger

A battery charger for 6, 12 or 24-volt systems has been developed by Sun Electric Corp., Chicago. It is 18 in. long, 17 in. high, and 8 in. wide, and operates on 115 v ac.

The charger is equipped with an automatic timing device which switches the battery to slow charging rate when the pre-set fast charge is complete. It has a selenium rectifier and will provide full wave rectification at all output voltages, the manufacturer states.

On the tilted panel there are control switches for charging time, voltage selection, charging rate, and off-on. The ammeter is graduated in 5-amp marks from zero to 75 amps. The scale is colored for identification for slow charge, fast charge and danger. Two circuit breakers protect the unit against short circuits overload, or defective batteries.

P163. Wheel Balancer

Morgan Wheel and Equipment Co., Omaha, Neb., has developed a method of wheel balancing which involves the use of a kit containing 10 one-oz weights and an indicator blade for locating the correct weight locations.



P164. Work Bench

A bench that has 15 sq ft of work space is being made by Kent Moore Organization, Inc., Detroit. The bench top is of heavy gage steel with a masonite cover, undercoated to deaden sound and vibration.

Bench doors and drawers with locks are provided for safe storage of tools. The bench is supported by heavy channel iron legs. Standard equipment includes a bench guard rail, self storing air gun and hose, portable tool dolly and tote tray, divided waste container, two bench drawers and storage shelves.

P165. Lift Trucks



Additions to the "Big Joe" family of lift trucks include four units that will lift 800 lb loads to 4 ft, 5 ft and 6 ft heights. They are compact units suitable for plat-

form work or lifting in confined areas. Both hand and electric-powered units are available.

Some of the manufacturing details included in the new units are: a heavy-duty recharging plant, a key-lock control ignition system, adjustable forks, self-adjusting foot brake, and as a safety feature, well protected hand guards.

The latest developments in parts, accessories, equipment and tools for the fleet shop

FILL IN CARD WITH APPROPRIATE NUMBERS FOR MORE INFORMATION



P166. Load Binders

A spring mounted in the handle of this load binder causes the binding rig to give with strain or variance of the vehicle, thus providing for close control over the load at all times. Constant tension is maintained over all types of terrain, the manufacturer states. Canton Cast Products Co., Canton, Ohio, makes this unit.

P167. Welding Electrodes

An electrode designed for gouging, chamfering, cleaning, and partial milling operations on metal has been announced by Eutectic Welding Alloys Corp., Flushing, N. Y. The electrode is coated with material which forms a cone at the striking end of the electrode, providing a jet effect arc. This action removes unwanted metal. The surface burns free from oxidation or slag, thereby providing a clean surface for later brazing or welding operations.

P168. Steam-Jet Cleaner

A heavy-duty "Speedyelectric" steam-jet cleaner, Model JC-50, made by Livingstone Engineering Co., Worcester, Mass., will operate at steam pressures up to 200 psi and rinse water pressures up to 400 psi. A built-in boiler that provides steam and rinse water heating operates on 30-40 kw, 220, 440 or 550 v 3-phase power and a water supply of 250 to 300 gal per hour.



P169. Automatic Washer

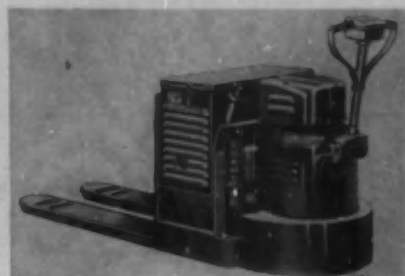
The Choldun Mfg. Corp. of New Haven, Conn., introduces an "Automatic" carwasher for cars and trucks. The unit consists of a spray elevator, an overhead lift mechanism and a control cabinet.

The unit is suspended from the ceiling by two bolts. The cabinet contains a motor and pump to control city water pressure. A glass cylinder for containing the solution has a metering device for equal distribution of shampoo.

Push-button control causes the spray elevator to automatically descend, flooding all sides of the vehicle with water. The spray elevator continues the wetting operation as it ascends and automatically shuts off. By pushing the button again, the spray elevator descends and ascends, blanketing the vehicle with shampoo, which adheres to the surface during mitting operation.

P170. Interior Light

Mounted on the sun visor, a light made by Roberk Co., Norwalk, Conn., gives spotlight action and may be swiveled in any direction inside or outside the cab. It has a standard 6-cp bulb, 5-ft of cord and open-end terminals for permanent installation.



P171. Power Unit

Model W. Towmotor Electric pallet truck has been combined with "Ready-Power," a generating unit, to provide maximum operating current over long periods of time. The manufacturer, Towmotor Corp., Cleveland, Ohio, states that this adaptation has been developed to provide shippers with the maneuverability and small size of the Model W, where the operation calls for round-the-clock operation and interruption for storage battery charging would be a loss in operating time.

The "Ready-Power" unit is a direct current generator mounted as an integral part of an industrial gasoline engine. This unit takes the place of the conventional storage battery.

P172. Direction Signal



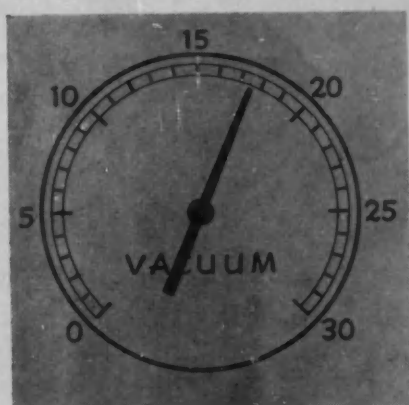
A new line of Class A direction signals with red, amber and white sealed beams for 6 and 12 v systems are now being manufactured by the S & M

Lamp Co., Los Angeles.

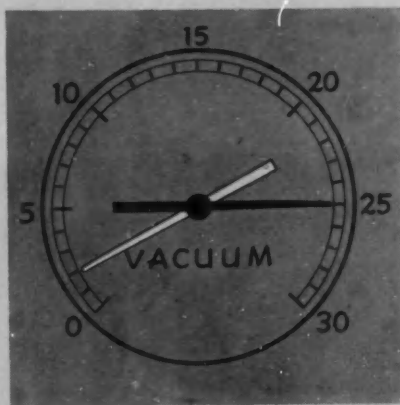
The No. 47 "Signal-Lite" is for bracket or fender mounting; the No. 47F for slush mounting, the No. 477 is a self-cancelling direction signal switch which mounts on the steering wheel.

(TURN TO PAGE 166, PLEASE)

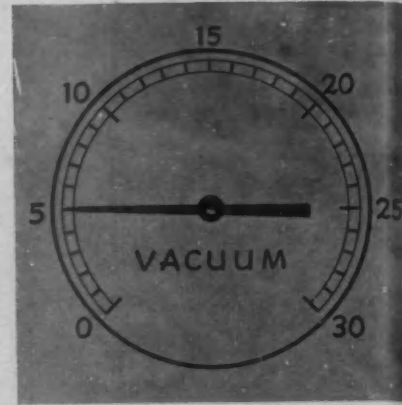
No. 7 How to Read A Vacuum Gage



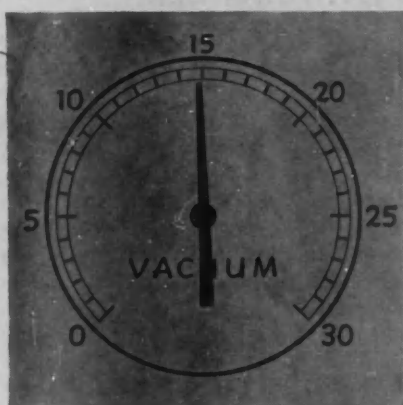
1. With engine at idling speed vacuum pointer should hold steady between 17 and 21 in. of vacuum.



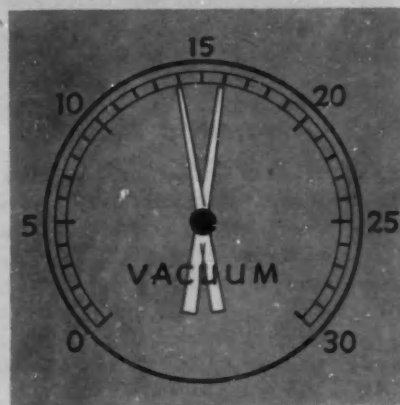
2. Opening and closing the throttle quickly should result in a fluctuation of the pointer from 2 to 25.



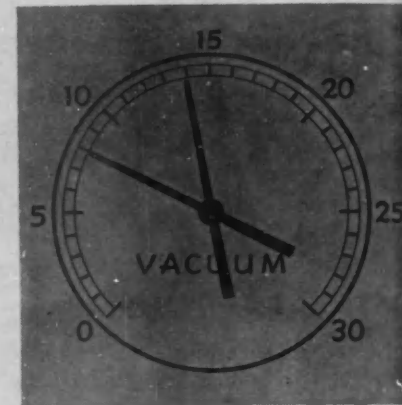
3. With engine at idling speed, dropping back of the pointer of 5 or less indicates sticking valves.



4. With engine at idle a reading of 15 or less indicates poor compression. Hand goes to zero upon throttling.

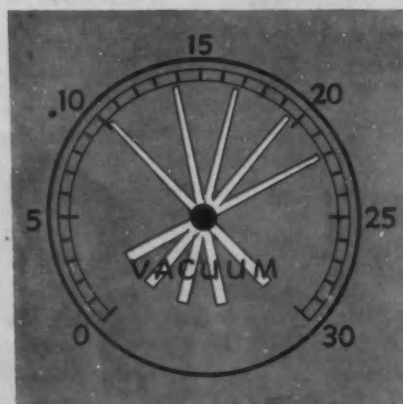


5. With engine under load and spark advanced a steady reading between 14 and 16 indicates late ignition timing.

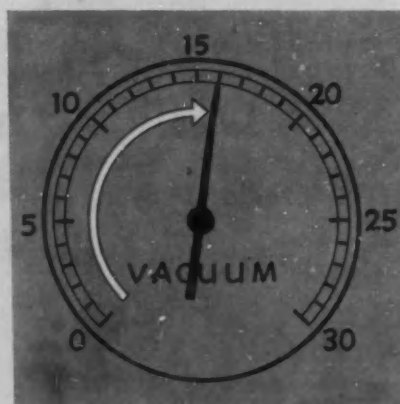


6. A steady reading from 8 to 14 (approximately) indicates late valve timing.

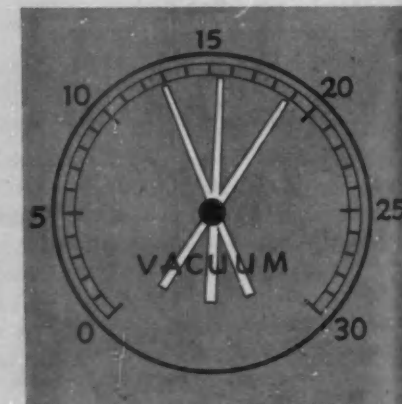
7. A reading ranging from 10 to 22, with the fluctuation becoming greater as the speed is increased, indicates weak valve springs.



8. A normal reading that drops to zero and builds up slowly or in steps to about 16 indicates a restricted exhaust line or muffler.



9. A floating of the needle between 13 and 19 may indicate: improper carburetor adjustment, insufficient tappet clearance, an occasional engine miss.



IDE

e



speed, drop
of 5 or less



to 14 (ap-
valve time

between 13
oper car-
not tappet
line miss.



ch, 1952



AT TRADE-IN TIME, TOO...

a Mack keeps paying off

Throughout its long and useful life, a Mack truck pays off in greater money savings for its owner because of less repairs and less time out...extended mileage life and lower ton-mile costs.

But that's not all. Even when it comes to trade-in time, you'll find that a Mack truck continues to pay off...in higher resale value.

That's a fact—consistently proved by impartial surveys among independent used truck dealers. These hard-bitten experts invariably report that Macks are worth more—because they know they can always get more for a Mack.

Higher Mack resale value is a direct result of the extra stamina and longer life built into a Mack truck. There's more value in a Mack at the end...because there's more value in it to start with. Prove to your

own satisfaction what "Built Like A Mack" means in greater savings—all the way. Write or call your nearest Mack branch or distributor.



...outlast them all

Mack Trucks, Empire State Building, New York 1, N. Y.
Factory branches and distributors in all principal cities for
service and parts. In Canada: Mack Trucks of Canada, Ltd.

1951 New Truck Registrations by Makes and States*

STATE		Auto-car	Brock-way	Chevrolet	Diamond T	Divco	Dodge	Federal	Ford	FWD	GMC	International	Kentworth	Mack	Peterbilt	Reo	Sterling	Studebaker	White	Willlys	All Others	Total
Alabama	Dec.	2	1	566	3		261	1	426		130	109		10				71	15	67	5	1,667
	12 Mos.	11	1	9031	20	26	2207	11	6187	1	2389	1619		174		38		840	223	399	27	23,294
Arizona	Dec.	1		190	4	3	53		118		72	37		2				14	4	23	4	525
	12 Mos.	14	2	2432	13	14	779	6	1697		877	604	16	22	6	23	2	237	73	223	39	7,079
Arkansas	Dec.			380	5		114		221		135	74						57	11	12		1,010
	12 Mos.	2		7886	17		1790	1	5300	2	2782	1536		40		31		787	105	323	13	20,617
California	Dec.	4		1082	25	12	806	2	943		414	233		9	10	2	15	106	83	87	11	3,516
	12 Mos.	209	8	20258	428	337	8982	35	15123	105	7804	4830	247	422	253	135	119	2299	984	1324	155	63,294
Colorado	Dec.			248	3	1	86		147		79	80						22	3	31	2	664
	12 Mos.	22		4612	23	47	1067	11	3196	8	1412	1164	22	48		1		423	45	511	34	12,889
Connecticut	Dec.	6		131	6	9	65	4	118		31	53		6				12	5	18	2	480
	12 Mos.	66	67	2569	96	93	975	46	1818	1	617	826		310		74	11	241	133	256	28	8,229
Delaware	Dec.			39			21				10	11						7	2			137
	12 Mos.	6	14	941	12	9	277		836	1	188	290		15		12		89	21	31	10	2,748
Dist. of Col.	Dec.	1		57	1		14		46		22	16		3				3	4	5	1	175
	12 Mos.	10	3	1022	25	42	297	6	610		363	303		22		20		23	41	72	11	2,870
Florida	Dec.	1		460	4	2	211		352		119	126		20		7		81	23	51	7	1,464
	12 Mos.	15	2	7429	143	74	2983	4	5423	2	1836	1589		337		113		1172	239	1018	120	22,499
Georgia	Dec.			560	1		135		305		85	95		22		2		50	12	11	3	1,282
	12 Mos.	2	7	11327	28	16	2791	6	8173	2	2838	2053	1	280		89	2	1261	258	405	53	29,549
Idaho	Dec.			145	4		48		113		66	43		5				19	3	28		476
	12 Mos.			2364	48	5	729	13	1735	1	1205	871	47	6	2	18	1	336	46	548	7	8,036
Illinois	Dec.	4	1	617	14	2	237	3	411		192	197		12		3		62	32	74	18	1,889
	12 Mos.	68	6	15919	619	223	5563	31	10285	7	3934	5350	1	288		144	28	1146	636	796	167	45,205
Indiana	Dec.	2		496	8	5	172	1	388		94	183		6		5		79	31	30	10	1,493
	12 Mos.	11	3	10078	110	91	3257	25	7286	6	2084	3873		193		117		1480	540	528	75	29,736
Iowa	Dec.			475	7	3	166		367		124	223		1	3			48	22	22	3	1,490
	12 Mos.	1		7820	107	35	1979	3	6082	1	1631	3270	1	99		35		683	177	282	45	22,231
Kansas	Dec.			387	4	1	98		277		103	149						28	3	25		1,085
	12 Mos.			7383	58	39	1626	8	4931	5	1914	2346	1	14		19		585	131	441	21	15,522
Kentucky	Dec.	4		467	5	1	123	1	340		143	99		2				51	6	43	6	1,291
	12 Mos.	11		7007	64	26	1652	10	4818	2	1899	1739		57		31		846	94	708	32	18,087
Louisiana	Dec.			480	3		113		361		125	64		3				42	6	22	1	1,202
	12 Mos.	16		7295	89	13	1423	1	5789	6	2148	1357		41		8		807	82	388	14	19,467
Maine	Dec.	1		132			24		95		57	45		2				13	4	32		408
	12 Mos.	9	14	1894	5	5	467	10	1440		626	543		123		2		214	58	204	11	5,624
Maryland	Dec.	9	3	191	1	9	70	2	173		46	43		2		3		18	5	23	0	607
	12 Mos.	37	73	3725	18	92	1369	57	2723	1	1015	1167		209		59	6	263	159	197	26	11,187
Massachusetts	Dec.	6	5	250	2	9	86	2	204	1	65	85		31		5	5	27	24	46	4	839
	12 Mos.	194	102	4421	110	163	1775	39	3651	8	1217	1342		382		140	49	420	364	301	49	14,687
Michigan	Dec.	5		929	14	22	417	8	376	1	265	184		14		27		58	23	85	22	3,022
	12 Mos.	82	2	14439	115	263	4649	90	13118	1	3335	2594	1	217		289		806	325	525	85	40,938
Minnesota	Dec.			413	7		136		410	2	99	134				4		66	11	24	4	1,313
	12 Mos.	5		6521	74	45	2135	1	5424	23	1590	2689	19	71		36	1	823	145	381	70	20,044
Mississippi	Dec.			575			146		318		202	85		6				55	4			1,421
	12 Mos.			7966	5		1579	8	5180	1	2980	1529		71		3		707	66	433	16	20,524
Missouri	Dec.			670			212	1	499		193	150		25		5		41	30	21	6	1,846
	12 Mos.	13		12791	89	108	3470	4	8261	3	3820	2772		120		70	3	934	545	434	46	33,461
Montana	Dec.			224	4		47		144		51	70				1	3	324	40	686	9	8,866
	12 Mos.	1		2854	45	9	806	4	2084		938	1162	25	38	6	47		324	40	686	9	8,866
Nbraska	Dec.			363	11		72		237		119	86						29	11	25	1	977
	12 Mos.	5	1	6629	184	16	1065		4287	11	1782	2142	33	61		41		566	145	588	23	16,922
Nevada	Dec.			594	5		196		395		365	174		1				62	4	81		1,874
	12 Mos.	2	1	57			19		87		16	37		4				15	3	19	4	225
New Hampshire	Dec.	12	13	1045	6	17	327	3	806	2	360	315		89		16	1	121	24	136	16	3,249
	12 Mos.	7	18	421	4	4	195	5	390	1	140	129		27		6		32	19	63	15	1,469
New Jersey	Dec.	191	379	8296	148	271	2731	90	5981	13	2173	2044		627		111	25	563	506	642	67	24,670
	12 Mos.			283			74		185	1	189	61		1				60	1	27	1	823
New Mexico	Dec.	4		2472	5		522		1419	3	988	480		42		2	31	365	17	215	13	6,501
	12 Mos.	29	37	956	31	15	418	8	1138	3	222	278		51		27		60	83	85	82	3,451
New York	Dec.	365	778	15519	549	412	6480	125	10888	46	4008	4826		1502		643	30	1034	1198	1220	335	48,840
	12 Mos.	74	4	10842	35	81	2678	8	7447	1	3022	2323		428		44	3	1200	300	521	262	29,083
North Dakota	Dec.			121			31		146		37	58						11				415
	12 Mos.			2252	11	5	629	7	1957		576	1320						270	4	213	4	7,232
Ohio	Dec.	1	2	815	9	21	289	9	685		211	258		33		15		84	40	69	11	2,572
	12 Mos.	111	16	14849	282	357	5183	69	11532	15	3541	4789		489		267		1460	1211	1198	147	45,467
Oklahoma	Dec.	1		886	1	4	299	1	544	3	210	213		7		8		75	32	47	18	2,329
	12 Mos.	3		8621	3	65	2099	3	5797	41	2109	2122		9	47		43	654	267	354	38	22,270
Oregon	Dec.			256	4	2	104		188		81	58		6				22	7	61	1	776
	12 Mos.	20		4360	85	40	1761	19	2963	1	1797	1585	87	224	17	28	9	436	171	980	63	14,636
Pennsylvania	Dec.	27	28	1035	22	17	548	8	889	5	290	344		64		18	2	103	86	90	16	3,559
	12 Mos.	275	593	16834	302	233	7304	125	12279	16	4314	5739		1186		257	29	1441	1061	1191	204	33,383
Rhode Island	Dec.	3	2	54		1	23		41		7	13		3				5	3	2	2	160
	12 Mos.	73	6	882	17	24	325		819		202	285		62		3	2	94	66	52	13	2,926
South Carolina	Dec.	1		575		1	118		265		74	62		15				82	6	17	3	1,190
	12 Mos.	15	1	6557	13	18	1371		3502	2	1376	976		145		8		512	121	182	25	14,794
South Dakota	Dec.			111			29		106		27	68						19	2	28		390
	12 Mos.			1998	43	2	661	2	16													

ates*

All there	Total
5	1,667
27	23,294
4	525
39	7,079
	1,010
13	29,617
11	3,516
185	63,284
2	664
34	12,899
2	480
28	8,229
	137
10	2,748
1	175
11	2,870
7	1,484
20	22,499
3	1,282
53	29,549
	478
7	8,036
18	1,869
57	45,295
10	1,493
75	29,736
3	1,490
15	22,231
	1,085
21	19,522
6	1,291
12	18,887
1	1,202
4	18,467
	406
1	5,624
6	607
11	11,187
4	839
14	14,897
2	3,022
40	40,938
	1,313
20	20,044
	1,421
20	20,524
	1,046
33	33,481
	599
	8,886
	977
16	16,922
	150
	1,874
	225
	3,249
	1,480
24	24,870
	823
	6,501
	3,451
49	49,840
	2,078
29	29,093
	415
	7,292
	2,872
45	45,467
	2,329
22	22,270
	776
14	14,636
	3,559
53	53,383
	180
	2,926
1	1,190
14	14,794
	390
	6,980
	1,300
21	21,664
	6,031
56	56,701
	267
	5,743
	130
	2,893
	1,621
22	22,082
	722
14	14,141
	571
11	11,062
	1,279
21	21,185
	401
	5,060
62	62,506
89	89,273
003	003,850
142	142,307

FEDERAL Trucks

POWERED for Profit-Plus PAYLOADS



★ Big powerful models — up to 35 tons — that can take it on around-the-clock schedules.

★ Husky, seven-bearing-crankshaft engines that meet modern power demands with — exceptional pulling capacity — ample reserve — low cost operation — long life service.

★ Rugged, heavy duty, deep channel frames with added section modulus for heavy loading.

★ Spacious, comfortable, all-steel cab built with many safety factors.

★ Heavy duty construction, hypoid axles with strongest axle shafts ever built for dependable service.

★ Big and powerful brakes with thick, long wearing liners to stop heaviest loads safely.

★ Latest design front axles, engineered for increased strength... easier steering... greater safety.

— and dozens of other desirable features that make today's heavy duty Federals Masters of the Highways

BUILT TO HANDLE THE BIG JOBS FASTER!

There's a reason why heavy duty Federal Trucks enjoy an enviable record of satisfactory performance. Their sturdy all-truck construction assures unmatched operating economy, low maintenance cost and long life service. Since 1910 Federal has built motor trucks exclusively. Federal engineers know what you operators need to meet today's hauling demands... to handle those big on-or-off-the-highway jobs faster and at a lower cost. So, put Federal gasoline or diesel powered units to work for you and save the difference. For particulars see your nearest Federal truck dealer or write us.

FEDERAL MOTOR TRUCK COMPANY • Detroit 9, Mich., U.S.A.

FEDERAL



TRUCKS

Diamond T Giant

Uses 300 HP Cummins Diesel

DETAILS have been released on the newest addition to the Diamond T truck line, the largest and most powerful it has produced for commercial use. Models 950 and 951 are powered with

diesel engines ranging up to 300 hp and tandem-drive rear axles optional for extreme loads.

The 950 Series is powered with Cummins diesels, and options include the



200 hp NHB, the 275 hp NHBS and the 300 hp NHRBS. For the 951 Series, Buda diesels are employed, with a choice of the 215 hp 6DA844 or the supercharged 280 hp 6DAS844.

The standard transmission is a Fuller 10B-1120 10-speed, with two overdrives. Rear axles must be specified to match the specific service. All types are available, including bevel, double-reduction and two-speed variations of both designs. In the majority of cases, however, the tandem drive six-wheeler is required, and both Timken and Eaton-Hendrickson tandems are available in models 950 and 951.

The four-wheel unit has a gvwt of 14,500 lb and a payload of 21,500 lb. The tractor-trailer rig has a maximum weight of 65,000 lb, of which 50,500 lb is available for trailer and load.

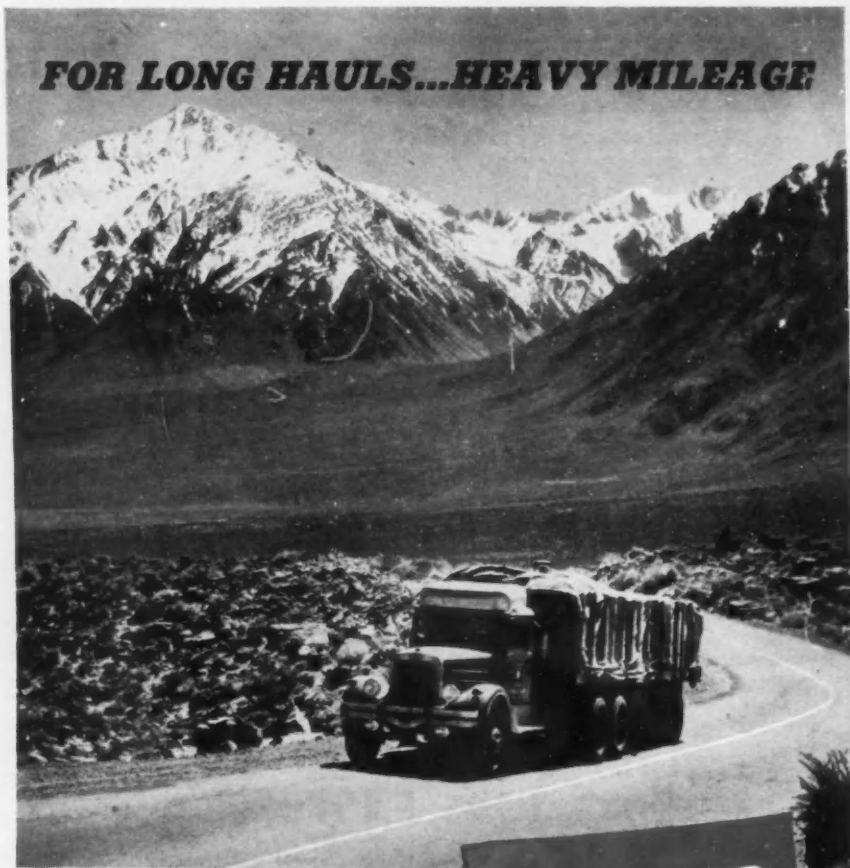
The six-wheeler, chassis and cab weigh 18,000 lb. Body and payload may total 27,000 lb to 32,000 lb, giving the maximum total between 45,000 lb and 50,000 lb. The combination has a maximum weight of 76,000 lb, of which 58,000 lb is available for trailer, body and load.

Wheelbase specifications begin with the tractor, from 170 in. to 182 in. The single axle unit begins at 194 in. and the longest is 224 in. For the six-wheelers, the wheelbase measures from 194 in. to 254 in. Tire sizes change with the body type and application to which the unit is to be applied, varying from 10:00-20 to 12:00-24.

These giant diesels have a flat front, a massive cast radiator and brush guard replacing the usual stainless-steel grille. The hood is also substantially longer, to provide for the larger engine.

Manganese alloy steel is employed for frame side rails which are of 5/16-in. stock and 10 1/8-in. depth for their full length. Channel inner-liners and fish-plates provide additional reinforcement for long wheelbase frame and six-wheelers.

The cab assigned to these models is the deluxe all-steel type, 69 in. wide with double wall construction. The windshield is of single-piece curved design.



CHAMP Heavy Duty Oil Filters and Refills filter faster and hold up better under tough trucking tests.

Champ's new medium, "Champak" is pressure-packed into a sturdy metal container to prevent channeling. Champ "Multi-Screen" has hundreds more oil inlets than ordinary refills. "Champak" automatically neutralizes acid too.

Price-wise, you pay no more for CHAMP premium quality — service-wise, CHAMP pays you. Try it on a test run and compare its superior performance for yourself.

Champ Oil Filters and Refills are available for Passenger Cars, Trucks, Tractors and Diesels.

More Than Ten Million Satisfied Users.

Write for the name of the jobber nearest you.

CHAMPION LABORATORIES, INC., MERIDEN, CONN.

BROWN
ALUMINUM
TRAILERS

USE

**SHULER
AXLES**



THERE ARE NO BETTER AXLES, AT ANY PRICE!

Since 1915, Manufacturers of: *One-Piece* Tubular and Square Commercial Trailer Axles, Heavy-Duty Front Axles for Trucks, Busses, and Off-Highway Equipment, Low-Bed Machinery Trailer Axles, Heavy-Duty Vacuum and Air-Brakes, Miscellaneous Forgings.

SHULER AXLE COMPANY, Incorporated, LOUISVILLE, KENTUCKY

DETROIT OFFICE

18954 James Couzens Highway

CHICAGO OFFICE

615 Davis St., Evanston

DALLAS OFFICE

3402 McFarlin Blvd.

EXPORT DIVISION

38 Pearl St., New York

WEST COAST WAREHOUSE

1280 Forty-Fifth St., Oakland

SOUTHWEST WAREHOUSE

301 N. W. 28th St., Fort Worth

NORTHWEST WAREHOUSE

1238 N. W. Glisan St., Portland



IHC Adds LP Gas Truck Line

SAVE MAINTENANCE COSTS MANPOWER

1. BENNETT FLEETMETER GASOLINE PUMPS REDUCE FUELING EXPENSE BY

- Speeding Truck Fueling — Saving Manpower
- Protecting against losses
- Providing accurate records



2. ECO AUTOMATIC TIREFLATORS HELP CUT TIRE MAINTENANCE COSTS BY

- Eliminating "inflate and check" guess-work
- Helping to spot tire troubles assuring greater tire mileage
- Speeding tire inflation — saving manpower



JOHN WOOD COMPANY

BENNETT PUMP DIVISION
MUSKEGON, MICHIGAN • TORONTO, ONTARIO
OFFICES IN PRINCIPAL CITIES

JOHN WOOD Est. 1867

THE motor truck division of International Harvester Co. has announced availability of factory-built liquefied-petroleum-gas-powered engines as optional on all IHC truck models equipped with the heavy-duty Super Red Diamond engines. The new LP-gas-powered models include the LP-185, LP-195 and LP-205 Roadliners, and all other models in the L-185 through LF-210 series.

"To provide maximum protection and safety, International Harvester has worked closely with the Underwriters Laboratories, securing approval on the installation of this equipment. The high-octane qualities of LP-gas make use of higher compression ratios possible in the "372," the "406" and the "450" engines. Especially engineered LPG carburetion, cold manifolding and other refinements are incorporated into the design.

Manifolding arrangement is entirely new because successful engine operation in this system depends upon a cold induction system free from the hot spots necessary for gasoline engines. This was effected by completely divorcing the intake and exhaust manifolds, eliminating the connection between the manifolds as it exists in the standard engine.

The standard gasoline tanks have been replaced, on the LP-gas models, by heavy-steel, dual, 62-gal liquid measure tanks and are also Underwriters listed. They are filled to approximately 90 per cent capacity, depending upon temperatures, allowing space above the liquid for expansion. These heavy, specially constructed tanks are designed to store the fuel supply under all operating conditions. The tanks are refilled at service stations by pumping the fuel in liquid form through a hose fitting which is attached to the fill valve on the pressure tank. Safety features include vertical venting pipes extending above the cab to permit discharge of relieved gas into the atmosphere; seal caps and automatic excess flow shut-off valves on fuel tanks and in the lines; electric shut-off valve; and extreme high-pressure lines and fittings.

EXIDE ULTRA START

*the sensational
new Exide*

BUILT TO LAST LONGER



IT'S OUTSTANDING! In every way! In starting dependability . . . length of battery life . . . low cost per mile of operation. Not only in normal fleet service, but also when weather and operating conditions are extra tough. For trouble-free performance at a saving, equip your trucks with the Exide ULTRA START, the fleet owners' battery that's built to last longer.

THREE EXCLUSIVE LONG-LIFE FEATURES

SILVIUM the corrosion-resistant grid alloy, resists a battery's most destructive enemy—grid corrosion caused by overcharging.

G.O.X. new active material. So effective that it is possible to take full advantage of the benefits of an acid solution of lower specific gravity.

PORMAX practically indestructible plastic separators. Extremely resistant to heat and acid . . . flexible and tough. Low internal resistance increases cold-weather starting ability.

PLUS—Vitrex Retainers . . . Element Protector . . . Plastic Connector Shields . . . Plastic Vent Caps . . . Improved Sealing Compound . . . Shock-resistant Container.

INVESTIGATE NOW! Learn why the long-life ULTRA START is your best battery buy . . . at any price.

THE ELECTRIC STORAGE BATTERY COMPANY
Philadelphia 2

Exide Batteries of Canada, Limited, Toronto

"EXIDE" "PORMAX" and "VITREX" Reg. Trade-marks U.S. Pat. Off.
"SILVIUM" and "ULTRA START" T.M. Reg. applied for

WHEN IT'S AN **Exide** YOU START

1888

DEPENDABLE BATTERIES FOR 64 YEARS

1952



Reo Announces 142 HP LP Gas Engine

Reo Motor's new 331 cu in., 142-hp Gold Comet engine has now been equipped at the factory to use LP gas. While this engine closely resembles the Gold Comet series, the company points

out that it is not a conversion unit, but a power plant designed to take all possible advantage of liquefied petroleum fuel. The engine has a compression ratio of 8.2 to 1.

In this design a new intake riser and exhaust manifold has been used to insure proper temperature control. A new cylinder head and specially designed pistons have been incorporated in the compression increase. Redesign exhaust valves, guides and inserts are said to improve combustion efficiency. Also new in this engine is the distributor body.

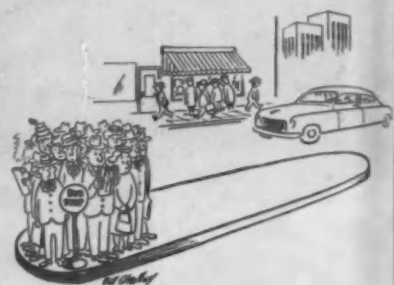


The 331 cu. in., 142 hp, factory-designed LP gas engine featuring a compression ratio of 8.2 to 1



The LP gas job compares with the company's F-22RT series. Is available in 20,000 to 40,000 lb weight range, 130 to 203 in. wheelbase

This engine will be used in vehicles ranging from 20,000 to 40,000 lb with wheelbases ranging from 130 to 203 in. Price of the LP gas trucks, excluding fuel tanks is said to be only \$426 more than the conventionally-powered vehicles in the company's F-22RT series. As a replacement power plant for any truck, the new LP gas engine, less fuel tanks, costs \$1,568 with hydraulic brake equipment; with air brakes, \$1,757.90.



AHLBERG

A Respected Name in Automotive Bearings Since 1908

TYPES FOR ALL MOBILE VEHICLES



"Unscheduled" failures that immobilize trucks, cargo and crew in transit mean unscheduled entries on the "loss" side of the ledger. That's why during "scheduled" major overhauls it pays to replace old ball bearings—regardless—with new Ahlbergs. Their unrivaled dependability and mileageability, proven over 43 years, will mean added insurance on long hauls—more profits in the long run.

AHLBERG BEARING COMPANY
Precision Craftsmen Since 1908
3025 West 47th Street, Chicago 32, Illinois

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ulic brake
\$1,757.90



March, 1952



Don't send a boy to do a man's job!

No go! When you've got a big, heavy job to do, you need a real man to do it.

The same thing is true with motor oil. When you've got big, heavy trucks or buses to lubricate, you need a "man-sized" oil. Phillips 66 Heavy Duty Motor Oil is specially made for just such heavy-duty lubricating assignments.

Carefully selected, scientifically blended crudes are refined by the new, improved "cold fractionation" method to preserve their basic film strength. Valuable lubricat-

ing qualities are *retained* . . . not over-cooked . . . giving Phillips 66 Heavy Duty Motor Oil exceptional toughness and staying power under severe conditions.

For *extra* protection, this fine oil contains additives which guard engines against acid action, disperse carbon and sludge, and protect against corrosion, too.

Try Phillips 66 Heavy Duty Motor Oil and see how it helps reduce operating and maintenance costs! Phillips Petroleum Company, Bartlesville, Oklahoma.

Oil for the Engines of Commerce



PHILLIPS 66 HEAVY DUTY MOTOR OIL

COMMERCIAL CAR JOURNAL, March, 1952

39

**GMC SCORES
AGAIN**



AMERICA'S FIRST 12 SLASHES TRUCK

If you use mediumweight trucks — here are facts you can't ignore

EVERYBODY knows the amazing economy and efficiency of Diesel power—how it has converted operations of many railroads, bus lines and commercial haulers from loss to profit.

For the first time, all the savings of Diesel power become available to every user of trucks rated as low as 2½ tons (19,500 GVW —35,000 GCW). It's the latest advance from the world's largest producer of Diesel trucks.

After years of engineering and testing, GMC offers American industry its new D-450 Series truck-tractors, powered by a new, lighter, more compact model of the famous General Motors "71" two-cycle engine that

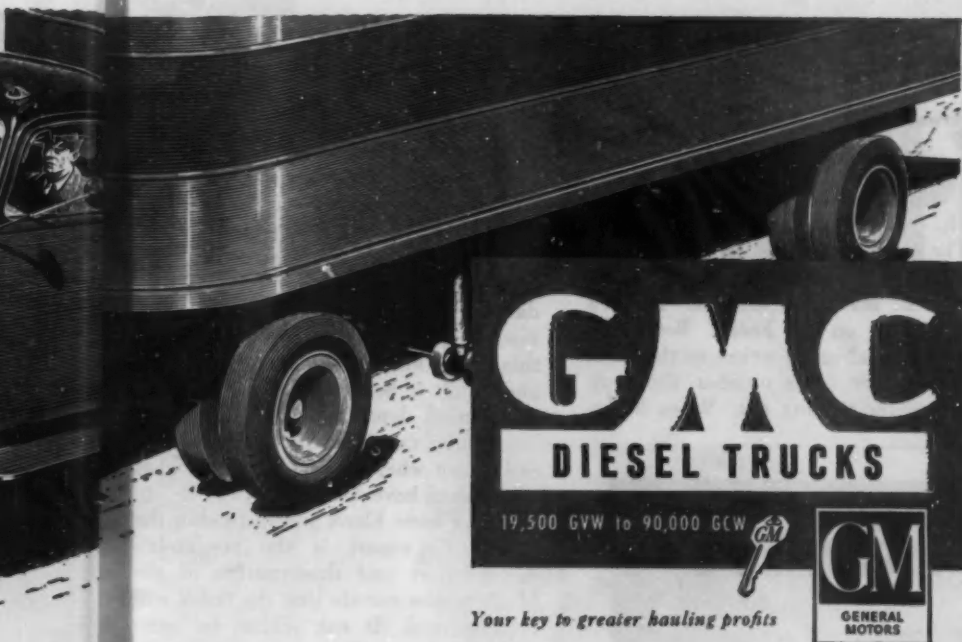
is first choice among Diesel truck users today.

It is the first "welterweight" Diesel ever built for smaller trucks. Yet essentially it is the same engine that has given million-mile performance in many of the nation's largest truck and bus fleets — *with outstanding savings in fuel and maintenance costs.*

Read the many savings you can effect with these new GMC Series D-450 Diesel truck-tractors — *listed at the right.* Add up what they would mean to you in extra profit—and you'll want to see your nearest GMC dealer today.

GMC Truck & Coach Division of General Motors

COMMERCIAL CAR JOURNAL, March, 1951



12½-TON DIESEL OPERATING COSTS

These facts mean more profit for you!

LONGER LIFE—FEWER REPLACEMENTS.

This new "3-71" smaller Diesel is identical in principle and operation with the time-proved GM "4-71" and "6-71" engines powering larger trucks—many of which are still in use after more than a million miles on the road.

LOWER OPERATIONAL COST. Because GMC Diesel engines get more miles per gallon than gas trucks—and cost far less to maintain—they pay for themselves several times over during their longer life. And because they have fewer moving critical parts, they require less maintenance, less shop time. Results, reported by many long-time GMC Diesel users—*sensational savings!*

AUTOMATIC FUEL MODULATION.

GMC's famous Fuel Modulator assures greater fuel economy. Regardless of throttle pressure this engine never gets more fuel than it needs and makes the most of what it gets. You get maximum engine efficiency without fuel waste—*another saving!*

LESS OVERTIME, WIDER RANGE. The proved ability of GMC Diesel trucks to "level out" the hills, to maintain on-schedule speeds without lugging, gets your drivers home earlier—or permits

them to cover more territory.

NATIONWIDE SERVICE. GMC has the largest coast-to-coast network of *approved* Diesel service dealers. Any place on the road, your drivers can quickly get service by calling Western Union "Operator 25."

IF YOUR BUSINESS uses trucks rated as low as 2½ tons—these new GMC 2½-ton Diesel trucks and tractors can save you plenty! Check with your GMC dealer **NOW!**

Get a real truck!

Tailored Maintenance Pays Off

Continued from Page 66

men's Daily Truck Report. (Form 1.)

The report for any particular truck can be picked up for perusal instantly at any time. We accomplished this by having a long rack along a wall in the garage on which each truck's number has been placed. Under each number is a hook for a clipboard file; reports and other pertinent data for that truck are on this file. For example, to get the

file on Truck No. 20, you merely remove the clipboard file hanging on No. 20 hook.

The salesman who drives the truck completes the first part of the form before he leaves on his run. Driver's reports stay on the hooks. Before he leaves, the salesman writes in the date, truck number, route number, time out, speedometer reading out. When he re-

turns and puts up his truck, he finishes his report by writing time in, hours in use, speedometer reading in. Speedometer readings are in reversed order so the higher figure will be above the lower for easy subtraction to get day's mileage. Other notes he makes if necessary include gasoline bought enroute, oil bought, repair expenses and explanation of any extra miles traveled or damage to truck or tires. He has three lines in which to report any repairs he thinks are needed; he signs the report and hangs it back on the hook. When the service department gets the truck later, they can examine the same record to see where it has been and what complaints have been made.

On the same blank and just below the salesman's report is the mechanic's daily report and this portion of the blank makes certain that the truck will be inspected. It can seldom be overlooked because the report will be examined by the foreman, by the salesman and other personnel before it is finished.

The mechanic checking the truck is charged with reporting gallons of gasoline put in truck, quarts of oil, pounds of grease, cost of repairs from work sheet, date of oil change, date, make and number of any tires changed. These quantities are converted into dollars and cents when the daily report is entered in the master sheet where daily records of oil, gas and mileage are kept.

To show how the system works, the foreman in checking these sheets and the reports of drivers might order a repair job based on gas and oil consumption or a break. He writes such an order on a Shop Repair Order blank (Form No. 2) and indicates the work to be done. From then on the labor time is kept on the front of the sheet and the parts record is kept on the back. No parts are issued without a regular requisition and when job is completed, totals are transferred from Shop Repair Order to a Truck Repair Sheet. (Form No. 3.)

The master sheet which is kept by the fleet superintendent, contains the daily record of gasoline, oil for each truck and the repair and labor time report goes to the shop foreman, who keeps a continuous record of these items by truck and totaled only for 13-week periods.

By this method we have been able to keep just as many important records and all important data without the labor of entering the same figures on a lot of different forms. Our blank forms have been decreased by about one third and yet the actual work has not been increased for any employee.

END

Please Resume Reading Page 71

COMMERCIAL CAR JOURNAL, March, 1952



KENDALL HEAVY DUTY CHASSIS LUBE

►MADE FROM EXTREMELY HEAVY 100% BRADFORD PENNSYLVANIA MINERAL OIL

►STAYS IN PLACE UNDER SEVERE SERVICE



RE-SURFACE OLD AND NEW PISTONS WITH

HASTINGS MICRO-KNURLING



EXCLUSIVE DIAMOND KNURL PATTERN. Crossed lines hold the oil, assure positive lubrication, better break-in

- Expands worn or collapsed pistons—brings them back to size
- Re-surfaces old and new pistons for better lubrication
- Ends scuffing or scoring
- Reduces blow-by
- Helps rings seat faster
- Assures better ring jobs
- Ends piston slap



**ONLY HASTINGS PISTON RING DISTRIBUTORS
OFFER HASTINGS MICRO-KNURLING SERVICE**

TYPICAL MICRO-KNURL PATTERNS
Ford Chevrolet Plymouth



HASTINGS MANUFACTURING CO. • HASTINGS, MICHIGAN

Piston Rings, Spark Plugs, Oil Filters, Casite, Drout

Tailored Maintenance Pays Off

Continued from Page 66

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END

Please Resume Reading Page 71



KENDALL HEAVY DUTY CHASSIS LUBE

MADE FROM EXTREMELY HEAVY 100% BRADFORD PENNSYLVANIA MINERAL OIL

STAYS IN PLACE UNDER SEVERE SERVICE

THERE'S A KENDALL LUBRICANT FOR EVERY REQUIREMENT



RE-SURFACE OLD AND NEW PISTONS WITH

HASTINGS MICRO-KNURLING



EXCLUSIVE DIAMOND KNURL PATTERN. Crossed lines hold the oil, assure positive lubrication, better break-in

- Expands worn or collapsed pistons—brings them back to size
- Re-surfaces old and new pistons for better lubrication
- Ends scuffing or scoring
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- Helps rings seat faster
- Assures better ring jobs
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**ONLY HASTINGS PISTON RING DISTRIBUTORS
OFFER HASTINGS MICRO-KNURLING SERVICE**

TYPICAL MICRO-KNURL PATTERNS
Ford Chevrolet Plymouth



HASTINGS MANUFACTURING CO. • HASTINGS, MICHIGAN

Piston Rings, Spark Plugs, Oil Filters, Casite, Drout

FEATURE FOR FEATURE...



FIRE EXTINGUISHERS are your best buy!



*exclusive inverting design renders constant
free flowing dry chemical, assuring faster,
more effective and complete discharge*

These fast, positive fire killers are easy to operate, compact, well-balanced and offer extensive maneuverability indoors or outdoors . . . no extra gadgets protruding or complicated operating parts. The outstanding mechanical breakage feature of C-O-TWO Dry Chemical Type Fire Extinguishers, plus continuous inert gas pressured agitation or fluffing, together with a skillfully blended free flowing dry chemical, guarantee lasting, foolproof fire protection. All sizes are rechargeable on-the-scene by anyone . . . no special tools required.

C-O-TWO Dry Chemical is a finely pulverized powder . . . non-conducting, non-corrosive, non-abrasive, non-freezing and non-toxic . . . special compound consists of sodium bicarbonate and other chemicals skillfully blended to render high fire extinguishing qualities, remain free flowing while being used and withstand long periods of storage without deterioration. When brought into contact with fire, C-O-TWO Dry Chemical absorbs a greater part of the heat, decomposes and releases fire killing gases. This heat absorption process acts as an insulating

screen between the fire and the fire fighter.

Fully approved and built to rigid specifications . . . C-O-TWO Dry Chemical Type Fire Extinguishers are exceedingly effective on flammable liquid, gas and electrical fires, as well as surface fires involving ordinary combustible materials . . . rated by Underwriters' Laboratories, Inc. and Factory Mutual Laboratories for class B and C fires.

Convenient 4, 20 and 30 pound hand sizes . . . no syphon tubes or valves within the cylinder to become clogged or inoperative . . . discharge hose and squeeze type discharge nozzle remain empty until actuation takes place . . . one piece removable top assembly.

Also, convenient 150 pound wheeled size . . . sturdy, wide-faced wheels . . . discharge hose and two position discharge nozzle having soft or solid stream fully enclosed in protection casing . . . footrail and dual bar handle provide easy inverting.

Act now for complete free information on these top quality fire extinguishers. Remember . . . you can't put fire off . . . fire doesn't wait. Get all the pertinent facts . . . write today!

C-O-TWO FIRE EQUIPMENT COMPANY NEWARK 1 • NEW JERSEY

Sales and Service in the Principal Cities of United States and Canada
Affiliated with Pyrene Manufacturing Company

MANUFACTURERS OF APPROVED FIRE PROTECTION EQUIPMENT

Squeeze-Grip Carbon Dioxide Type Fire Extinguishers • Dry Chemical Type Fire Extinguishers
Built-In High Pressure and Low Pressure Carbon Dioxide Type Fire Extinguishing Systems
Built-In Smoke and Heat Fire Detecting Systems

Bus School

Continued from Page 57

Further proof can be found in the fact that one driver or another will attend the same class three or four times in a sincere effort to master the subject of the lecture which may be particularly troublesome to him.

Each driver and mechanic is handed a printed sheet listing the various divisions of the course and, as he attends each lecture he checks off this or that division. He signs his name and files it with the office.

Question periods are held at various points throughout the lecture-demonstration with drivers being free to interrupt at any time to clear up a troublesome point. Also, after lessons, drivers are asked to answer a questionnaire.

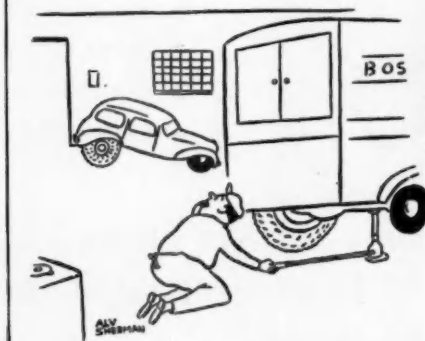
Our evidence that the school is paying off is found in the very fine trouble reports drivers currently surrender to us after runs. But further evidence comes in the many, many road failures they are now correcting themselves where formerly it meant a trip for the service truck.

For instance, our drivers have made brake adjustments on the road; have primed diesel engines; have replaced generator fuses on the road; have released frozen brakes, etc. In one case a bus was saved from possible destruction by fire because the driver knew how to disconnect the battery cables. More important, he recognized *why* the cables had to be disconnected.

We like the idea of the bus for our school. First, we can only get so many drivers into it at one time which is all to the good. Second, the bus is mobile and can go to the men, instead of them coming to it, when necessary. So far the bus has traveled to our downtown Detroit terminal and to our outlying garages in the area. So successful has been the school bus that we are now considering sending it all over our whole system.

END

Please Resume Reading Page 58



COMMERCIAL CAR JOURNAL, March, 1952

for tougher jobs!

New
and
Better

STANOLUBE HD-M

REG. U. S. PAT. OFF.

Motor Oil

**GET LONGER ENGINE LIFE, LOWER MAINTENANCE COSTS
WITH THIS NEW AND BETTER HEAVY-DUTY MOTOR OIL**

• Since the introduction of STANOLUBE HD Motor Oil in 1942, Standard has led the way in the development of additive-containing lubricants for automotive and diesel engines. New and better STANOLUBE HD-M Motor Oil is tailored to meet the demands of today's increased severity of operating conditions. It's a tougher oil for tougher jobs! Here's what it offers to operators of heavy-duty equipment:

LONGER ENGINE LIFE results from STANOLUBE HD-M's improved detergent-dispersant action. Engines stay clean under the tougher operating conditions caused by adverse fuel quality, higher running temperatures, and prolonged periods of severe, heavy-duty service. Freedom from deposits means less engine wear. Less engine wear means longer engine life.

LOWER MAINTENANCE COSTS result from STANOLUBE HD-M's greater oxidation stability. It helps keep pistons, rings, and valve stems free from varnish-like deposits and provides protective films of oil in the face of high operating temperatures. Less wear on engine parts, less time in the shop, and longer periods between overhauls mean lower maintenance costs.

Your nearby Standard Oil service-supply center stocks STANOLUBE HD-M Motor Oil for fast *local* delivery. This service-supply center is also headquarters for your Standard Oil lubrication specialist. Call for his services today. He can help you obtain maximum lubrication benefits with STANOLUBE HD-M . . . a tougher oil for tougher jobs! Or write: Standard Oil Company (Indiana), 910 South Michigan Ave., Chicago 80, Illinois.

COMPANY (INDIANA)

Tandem Conversion Boosts Payload

Continued from Page 55

the weight per axle basis. Thus, through the use of the jeep, the payload could be substantially increased with comparatively little outlay for equipment and with an insignificant expenditure of time.

The Dakota jeep—a free-wheeling, floating type axle, with heavy supporting beams—can be permanently or semi-permanently attached to either the

tractor or the trailer unit. It is attached to the tractor through the use of the normal coupling which attaches to the fifth wheel on the tractor unit; the trailer attaches to the jeep in the same manner—in other words, a second fifth wheel on the jeep allows the same sort of coupling to be made. Thus, the jeep implies that the tractor has been transformed into a tandem unit which is ex-

actly what has occurred. With this additional axle, the load can be distributed equally over the four wheels instead of the initial two tractor wheels.

Coupled up to the tractor unit, the jeep can be locked in place and held rigid, with the second fifth wheel acting with the same stability as the fifth wheel on any tractor unit.

This rigidity is secured through the use of the "jeep hook," a slot coupling which is held in place, while backing up, through the use of an air-pressure unit controlled from the cab. Thus, while backing the truck this air pressure device enables the tractor to be handled as efficiently as any fixed tandem unit. While moving forward, however, the air pressure is not used and the jeep is then merely a trailing unit.

Another feature which allows for more equal distribution of the weight over the four wheels is the cog ratchet device which enables the load to be inched forward or backward on the rocker beam of the jeep, thus getting an approximation of equal distribution of weight over each wheel.

The jeep can be disconnected from either the tractor or trailer with equal ease. When disconnected from the tractor, it becomes a part of the trailer and takes the place of the dolly. Thus, through the use of a jack or blocks between the rear of the rocker beam of the jeep and the bed of the trailer in order to secure a better balance, the tractor can be driven out with the same ease as driving it away from the lot.

Tandem Unit Proves Itself

THE Dakota Co. first added four units to their equipment back in 1944, and now has 23 of 130 units so equipped. This figure is hardly a true
(TURN TO PAGE 102, PLEASE)



"WHADDA YA SAY, BUSTER,-FIGURE WE GOT HER DOWN TO TWO TON YET?"

COMMERCIAL CAR JOURNAL, March, 1952

Neglected Wires Cause Auto Fires!

Faulty Car Wiring Causes Auto Fire

Auto Burns When Cable Shorted

A [redacted] burned on South [redacted] just off [redacted] Monday night when a star- [redacted] ed out. Fire Chie-

Auto Burns When He Shorted

Cable A [redacted] burned [redacted]
[redacted] just off [redacted]
[redacted] Monday night when a star-
[redacted] ed out. Fire Chief [redacted]

Short in Wiring Causes Fire

A short in the wiring of a Ford caused \$30 damage before the city fire department put out the fire at 3:30 p.m. Monday. The car, belonging to [redacted] of Liberty, was parked at [redacted].

The fire department reported no damage from fire at the home of [redacted] at 5:30 p.m.

[redacted] to two grass fires, said damage, were [redacted]

Car Guttred By Fire On Main Street Monday Afternoon

A worn battery cable caused automobile fire which broke out before the London volunteer firemen arrived, in spite of the fact that the car was quickly run after the fire was sounded early Tuesday afternoon. The car belonged to a woman, Mrs. S. K. Smith, who was on his way home with his family after a business trip to Miami. They continued their trip the same afternoon by way of New York.

The interior was almost completely destroyed. Both windshields were shattered and the engine melted by the intense heat and flames.

Firemen Douse Blaze in Car

tinguished a small Oldsmobile two-door sedan by a window of the car, which was parked in front of the entrance. The glass, which was caused by a shot, was broken and the car was driven away.

Drives Burning Car To Station

his 1948-model auto
Fire 11
headquarters Tur
noon at 4 o'clock.
broken out in wiring
dash. Firemen exit
- 315

**Auto Complete Loss
After Starter Short**
An automobile

complete fire loss last night at 8:45 when a cable to the station shorted out on the line.

Fire District

Fire believed to have caused almost complete destruction to the body of a car on [redacted] street.

department, answered
used car lot

Fire Destroys Automobile

virtually destroyed
four-door sedan earl
stood in the owner's
A short circuit in wiring
owner, field sales

It was covered

Auto Is Lost In Blaze; Another Extinguished

Fire Exting.
Flames originating from
completely gutte-

Yesterday at 4:21
struck a small out-
for storage by the
Company.

Auto Burns
completely destro

Fire coming from the automobile on the farm in [redacted] last week. A short circuit in the battery cable was believed to have set the unoccupied car on fire. [redacted] the driver to [redacted]

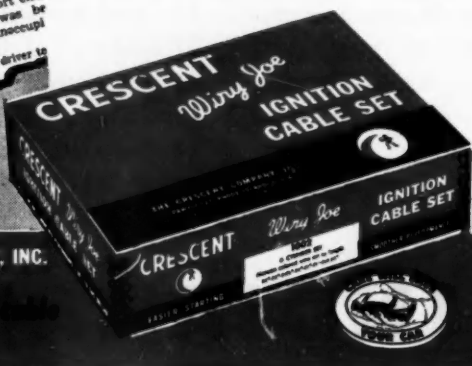
**BURN UP TRUCKS AND
BUSES, TOO...**

**Check the Wire and Cable
on every job! Replace old
or defective wiring with
CRESCENT WIRY JOE
WIRES and CABLES!**

Every day, hundreds of papers all over the country headline fires that destroyed cars, trucks, or buses *because of defective wiring!*

What's more, National Safety Council figures from all over the country show that vehicle fires caused by defective wiring run as high as 92%!

Don't compromise with safety . . . don't compromise with the best engine performance! Check the wire and cable on *every* unit in your fleet as a part of routine servicing. When insulation is worn or cracked . . . when conductors are corroded . . . install new genuine Crescent Wiry Joe Ignition Wires and Battery Cables. It means a big boost in safety and engine performance . . . a big cut in your costs.





NO BRAKE FADE

"Increased mileage and thoroughly dependable operation have helped us reduce brake maintenance costs appreciably. We have had no experience whatever with "fading" since the J Combinations (RED BLOCK) were installed."

E. L. Perkins, Jr., Supt. of Maintenance
Overnite Transportation Co.
Richmond, Virginia



MILEAGE NEARLY DOUBLED

"We have standardized on World Bestos RED BLOCK because we have almost doubled our mileage in comparison with other standard makes of linings. We have found that RED BLOCK gives our drivers dependable control under all driving conditions."

Nels F. Andreasen,
Service Manager
Lamb Transportation Co.
Long Beach, California

LESS DRUM WEAR

"Since we started using World Bestos RED BLOCK . . . the drivers like the brakes, we definitely notice longer mileage between relines, drum wear has been decreased and, as a result, maintenance costs have been reduced."

Carl H. Smith, Master Mechanic
Hamilton Trucking Service, Inc.
Seattle, Washington



USES NO WATER

"World Bestos RED BLOCK 'J' Combination has increased drum life and made it possible to operate trailers for the first time without using water on the drums . . . records show RED BLOCK has given greater mileage between block relines."

Charles Pearson, Equipment Superintendent
Weyerhaeuser Timber Co.
Tacoma, Washington



WORLD BESTOS

NEW CASTLE
INDIANA

Tandem Conversion

Continued from Page 98

one, however, since the interchangeability of the units gives a wider range of usage than if the jeeps were permanently attached to a single tractor or a single trailer.

All through the experimental period, careful records were kept of the performance of the jeeps. This study was not only used by the Dakota Co. to determine their future place within the

organization, but was also made available to the entire trucking industry through the Common Carrier Conference of ATA and the Middlewest Motor Freight Bureau.

The greatest advantage of the jeep is that of combating, to a degree, the weight problem, particularly in states such as Minnesota, which have weight laws based upon the axle load. In other words, the jeep brings another axle into the pattern with the result that a given weight load may be distributed over four wheels instead of two. To be specific, Minnesota's laws permit a gross

weight per wheel of 18,000 lb. However, with the jeep the load can be distributed and increased to 28,000 lb. Where a total gross weight of 57,000 lb is permissible under the Minnesota regulations with a single unit, the use of the jeep enables that gross to be increased to 69,000 lb. And since the jeep itself weighs 3800 lb, that means a net increase in the pay load of 7500 lb.

Of course, the interstate problem of crossing state lines where gross weight regulations prevail rather than the axle load limits nullifies this advantage. However, traffic within a state where the per wheel regulations are used gives a tremendous pay-load advantage, and enough bordering states do have such regulations that a considerable amount of interstate trucking can be accomplished with the greater load limit.

Apart from the weight advantage, however, there are many other advantages provided by the jeep. In the northern area of the nation, including Minnesota and adjoining states, there is the nightmare of weight restrictions on roads during the spring. Here again, the jeep or a tandem unit becomes virtually a necessity. For instance in North Dakota, during this spring period of road restrictions, there is a 12,000-lb load limit per axle. The addition of the extra axle provided by the jeep allows, then, an increase of 12,000 lb in the pay load.

Heavy construction firms, who find it necessary to move their heavy equipment about, are highly sold on the jeep. Where the movement of such equipment would not warrant the prohibitive cost of permanent tandem equipment, the jeep can be used to move any number of pieces of the heavy rolling stock.

Cost is another factor in favor of the jeep. While the addition of a jeep unit virtually changes the tractor into a tandem, the cost is relatively low. The tandem unit, with its extra transmission, and a permanent part of the tractor, runs into a huge amount of money. The jeep, comparatively speaking, at approximately \$4,000, is an economic piece of equipment for accomplishing a part of the same function of a tandem. It is not to be construed, however, that the jeep can be placed in competition with the tandem tractor.

END

Please Resume Reading Page 56

Could Be

Road Service Mechanic: "Oh, waitress, please bring the manager here quick, I've just found two flies in my soup."

Flip Diner Waitress: "Well, so he finally caught up with her."

COMMERCIAL CAR JOURNAL, March, 1952

SPEED UP YOUR CLEAN UP

PUT KELITE TO WORK



FOR EXAMPLE:

Now clean aluminum pistons, pot metal or die-cast parts merely by soaking in a solution of KELITE NO. 60 at the proper pH. It'll speed up cleaning of these "touchy" metals...do the job for you easier...better...with complete safety...even though you raise the temperature of the solution, or prolong the soak.



FOR EXAMPLE:

KELITE FORMULA 89 is the modern super-cleaner for steam cleaning painted or aluminum surfaces—as well as iron or steel. For stripping greasy engines and parts clean-as-new, use heavy-duty KELITE NO. 24. Both are steam cleaning compounds which withstand extreme heat...won't break down in the heater coils...have a built-in water scale inhibitor...no objectionable odor or fumes.



Phone or write the Kelite Service Engineer in your city today for literature or demonstrations of the advanced Kelite Super Cleaning Materials.

LOS ANGELES 12, CALIF.
1250 N. Main St.
CHICAGO 45, ILL.
3401 Touhy Ave.
JERSEY CITY 2, N.J.
629 Grove St.

SERVICE OFFICES
IN PRINCIPAL
CITIES

"KELITE" REG. U.S. PAT. OFF. • PH CHART COPYRIGHTED 1942 BY KELITE PRODUCTS, INC.



Accidents Resulting from Mechanical Defects Increased 300% in 1950

CAUSE OF ACCIDENTS	Number of Accidents	Per Cent of Total	Total Property Damage	Total Personal Injury	Total Fatalities	ACCIDENTS INVOLVING FIRE			
						Number	Killed	Injured	Damage
BRAKES.....	704	40.3	\$984,542	294	5	21	1	19	\$162,708
TIRES.....	151	8.6	887,137	120	22	44	....	2	349,919
ENGINES.....	148	8.5	140,474	124	16	13	3	8	47,088
COUPLINGS.....	126	7.2	215,097	46	2	7	1	2	37,850
STEERING.....	77	4.4	193,735	18	3	8	....	4	61,045
WHEELS.....	108	6.2	117,610	44	4	4	1	3	38,387
LIGHTS.....	88	3.8	208,848	40	2	20	1	3	55,985
SPRINGS.....	60	3.4	84,285	20	5	1	....	....	7,521
FUEL LINES.....	86	3.2	137,328	63	1	20	....	7	73,054
AXLES AND DIFFERENTIALS.....	37	2.1	40,997	27	1	1	....	1	11,350
OTHER DEFECTS.....	210	12.3	221,351	152	21	12	....	2	32,239
TOTALS AND PERCENTAGES....	1743	100.0	\$2,922,615	984	82	151	7	51	\$877,116

Motor carrier accidents for 1950 which involved mechanical defects totaled 1707 or 6.6 per cent of the 25,889 accidents of all types reported to the Interstate Commerce Commission. The number of mechanical defect accidents was an increase of almost 300 over the total for any prior year. As a result, there were 78 fatalities, 937 injuries and \$2,863,168 property damage, all of

which were substantially in excess of the totals for 1949.

The number of mechanical defects, with one slight exception, has been increasing since 1942 and the increase for 1950 was the largest increase in any single year.

The number of fatalities, after declining in 1949, increased to a number which, with the exception of a few

years, has been remarkably consistent.

The number of injuries which had been steadily decreasing for five years showed a substantial increase.

The amount of property damage also increased over 1949 and reached the second highest total for any of the 10 years included in the analysis.

The percentage of mechanical defect (TURN TO NEXT PAGE, PLEASE)



AM

TRAILER



ALUMINUM-MAGNESIUM

IT IS DURABLE

IT IS LIGHT

IT CARRIES NO GREAT PREMIUM PRICE

IT INCREASES THE PAY LOAD

KENTUCKY MANUFACTURING COMPANY

R. C. Tway Company, Incorporated, Owner

2601 SOUTH THIRD STREET, LOUISVILLE 8, KENTUCKY

Mechanical Defect Accidents Increase

Continued from Page 105

accidents of all accidents after declining for four years from 1944 to 1948 has increased slightly during both 1949 and 1950.

The heart of the mechanical defect accident problem is brakes. Accidents due to defective brakes contributed, for 1950, to over 40 per cent of all mechanical defect accidents and they are increasing at a more rapid rate than

any other type. Tire failure accidents and accidents due to engine failures are next most frequent but each of these types occur only about one-fifth as frequently as brake accidents. In addition, these two types of accidents, as well as most others have been responsible for smaller percentages of all mechanical defect accidents in recent years but the large increase in brake accidents, to-

gether with substantial increases in wheel and "miscellaneous" accidents, has resulted in increasing the total.

The analysis divides accidents into those where the motor carrier's vehicle was standing still when the accident occurred and those in which it was moving. The former type is usually about one-sixth of the total but the nature of these accidents is such that they consistently cause substantially more than half of the fatalities.

For 1950, buses were involved in only 6.7 per cent of the accidents as compared with 11.3 per cent for 1946-1950, inclusive. Based on mileage operated, on the basis of latest data available, property carriers are about three times as likely to be involved in a mechanical defect accident as are buses.

The analysis also shows that mechanical defect accidents are: (a) less likely to result in an injury than are the generality of accidents (because of the low proportion of buses involved); (b) less severe than the generality of accidents on a fatality rate comparison; (c) much more damaging from a property damage standpoint than all accidents. In addition, "leased" operations are somewhat more likely to be involved in mechanical defect accidents than are vehicles owned by the carrier.

As to the causes of mechanical defect accidents, the report indicates that lax and improper inspection and maintenance or absence of such inspection entirely is the principal cause. Design changes would help to correct some of the difficulties but the variations between carriers is such as to indicate that the primary, and almost only, corrective measures needed are because of carrier differences rather than because of differences in the vehicles.

Director Honored



Herm Teetor (left) advertising manager and director of Perfect Circle Corp., receives congratulations from PC president Ralph Teetor on completion of 25 years' service with the piston ring firm. In addition to receiving a membership certificate in the firm's 25-Year Club, Mr. Teetor was presented with a diamond pin



A soldered joint is no better than the solder used to make it. A poor grade solder often leads to a poor job . . . customer dissatisfaction . . . additional costly repairs . . . and smaller profits for you! That's why it pays to get the best solder you can buy. Buy Federated Gardiner brand Solder and you get a tin and lead alloy carefully prepared and engineered by experienced production men under the strictest metallurgical controls.

A variety of Federated Gardiner brand Acid Core Solders containing an active chemical flux is recommended for all automotive repair work . . . Solid Wire Solders where a separate flux is desired. Available in all commercial wire sizes and compositions through your local jobber.

Federated Metals Division



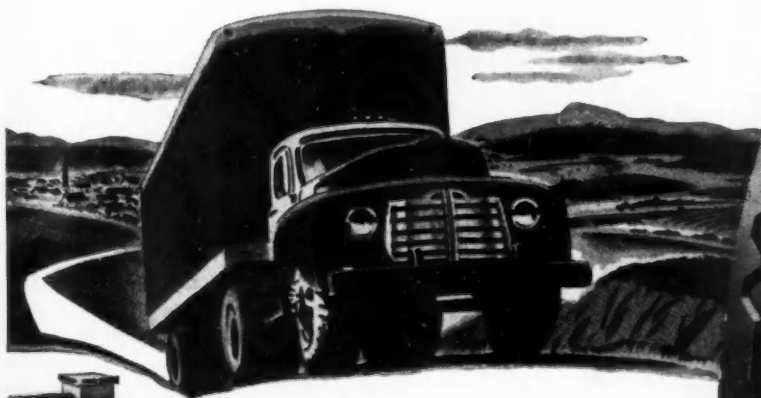
AMERICAN SMELTING AND REFINING COMPANY • 120 BROADWAY, NEW YORK 5, N. Y.

GENERAL ~~RIB~~ HIGHWAY

**costs less per mile because it's
engineered for more Original Miles...more Recap Miles**

Whether you figure your deliveries in tons, pounds or gallons, across country or across town, you'll make more deliveries on time and at lower cost on the General Rib Highway Truck Tire. More miles of rayon cord with a special shock absorber construction assures, with ordinary care, thousands of extra, safe, low-cost original miles—then thousands more, safe recap miles.

THE GENERAL TIRE & RUBBER CO., AKRON, OHIO



OVER-THE-ROAD



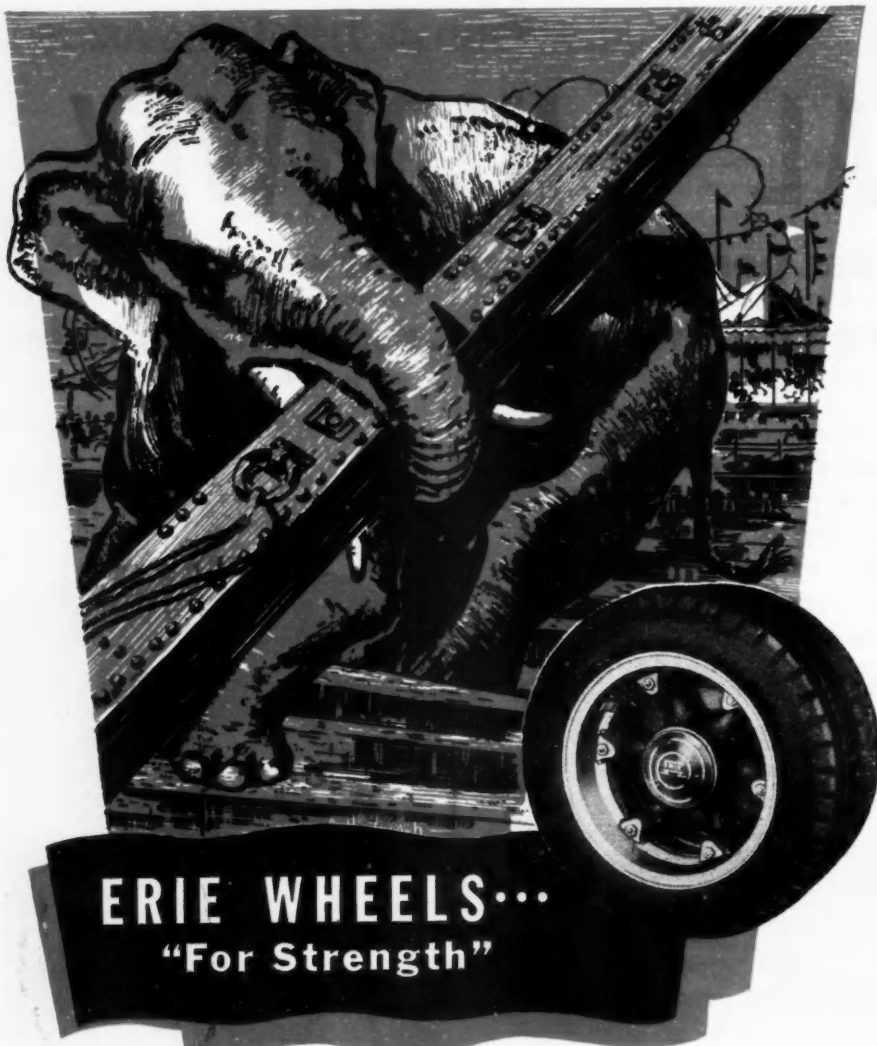
KRAFT
SYSTEM
RECAPPING
A GENERAL TIRE SERVICE

*Look for this sign
for thousands of
extra miles*

*Factory-trained experts
using the famous factory-
controlled Kraft Recapping
System assure you of uni-
formly high mileage results.
Adds thousands of extra,
low-cost recap miles to
worn tires.*

**THE
GENERAL
TRUCK TIRE**

REQUEST GENERAL TIRES ON YOUR NEW EQUIPMENT



ERIE WHEELS... "For Strength"

Great strength . . . synonymous with Erie Wheels . . .
"Old timers" in highway transportation, Erie Wheels set
the standard.

Erie Wheels provide:

- Rugged Strength for heavy loads
- Resiliency of Malleable Iron for rough going
- Spoke design, for cooler tires and brakedrums
- Demountable rims, for easy tire changing
- Tubular spokes, for minimum unsprung weight

Specify . . .

Erie Wheels

ERIE MALLEABLE IRON COMPANY

Automotive Wheel Division
ERIE • PA.



Fitzjohn Cityliner Buses Announced

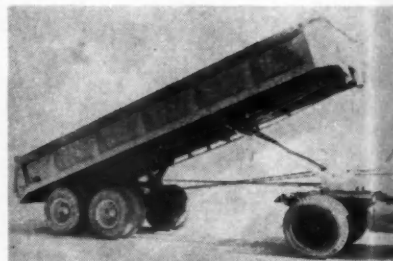
Completion of the "Cityliner" line of rear-powered city coaches has been announced by F. W. Feeney, president of Fitzjohn Coach Co., Muskegon, Mich. The Cityliners are now available in capacities ranging from 29 to 39 passengers.

In the 29-31 passenger class, the FTG has a wheelbase of 155 $\frac{1}{4}$ in., an overall length of 323 $\frac{3}{4}$ in. and weighs 12,000 lb. It is powered by a Hercules JXLD, 6-cyl gasoline engine which develops 131 bhp at 3000 rpm. Another unit in this same seating-capacity class is slightly heavier at 12,400 lb gvw, is powered by a Hercules WXLD six which develops 140 hp at 2600 rpm.

Three units make up the 33-35 passenger group. They have a 182 $\frac{1}{2}$ -in. wheelbase, an overall length of 351 in. and weigh 12,750 and 31,150 lb respectively. The lighter unit is powered by a Hercules JXLD and the heavier by a WXLD similar to units in the smaller passenger class. The other unit in this group is the FTD, a 13,800 lb diesel six. It is powered by a Hercules DWXLD developing 142 hp at 2600 rpm.

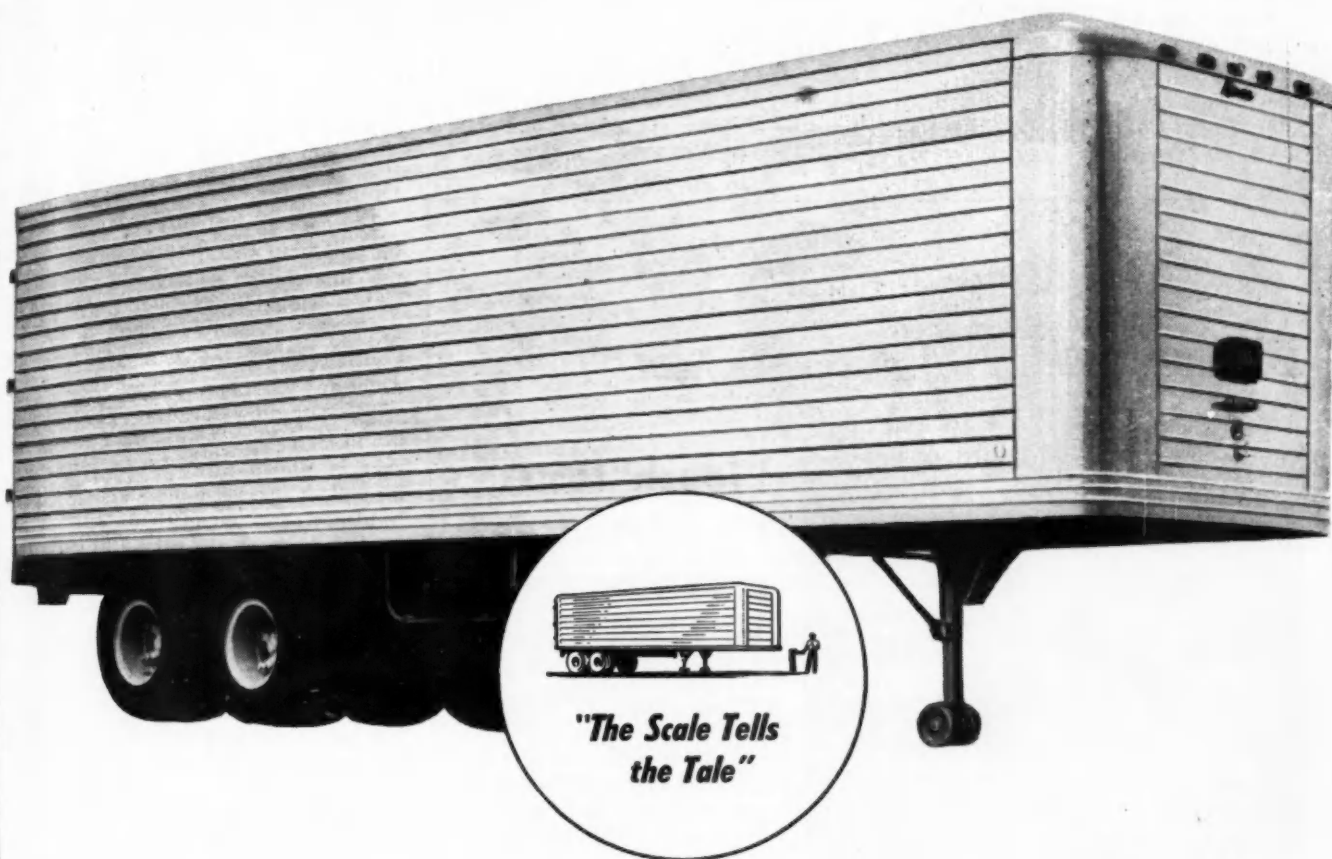
The largest capacity group, the 37-39 passenger size consists of two models which have a 210 $\frac{1}{4}$ -in. wheelbase, an overall length of 378 $\frac{3}{4}$ in. The lighter unit is powered by a Hercules WXLD gasoline six, the heavier by a diesel of the same type. They develop 140 and 142 bhp respectively at 2600 rpm.

Cable Dump Trailers



Trailers that dump by cable action rather than hydraulic are being made by Schonrock Equipment Mfg. Co., San Angelo, Texas. Dumping is actuated by power take off which rotates the cable spool mounted at the tractor cab. The cable extends through a pulley arrangement located at the 5th wheel position which in turn is connected just forward of the rear axle assembly. When the pulleys tighten, the trailer is brought forward and elevated by pivoting on two support beams which are fixed to the tractor and trailer frames. The entire operation may be controlled from the cab.

Deadweight costs you double



Save with Brown Lightweight Aluminum Trailers

Dead weight costs you double — extra taxes and lost revenue. With Brown lightweight aluminum trailers you save taxes, gain extra revenue.

In most states you pay taxes on the gross weight of your trailers. If the trailers are heavier than necessary you not only pay taxes on dead weight but lose the extra revenue you could earn with Brown lightweight trailers. They are hundreds of pounds lighter than comparable trailers — carry bigger payloads, earn more revenue per trip.

Put a Brown trailer on any scale anywhere. Compare its weight with any other trailer of the same specifications. **LET THE SCALE TELL THE TALE.** You will find, like many other transport operators, the lighter weight of Brown trailers

saves overhead and taxes. Their bigger payloads build profits.

If you want to cut out dead weight, keep profits up when overheads rise, keep vehicle taxes down — get your trailer weights down — **BUY BROWN** for:



CCJ News Reports

Continued from Page 31

and Harvard Business School graduate, "Dick" sports a master's degree in business administration.

He began his business career at the Budd Co. in 1935. Six years



later he was called into the Navy as a Commander, serving as chief engineer of the *USS Washington*. In 1945, upon leaving the armed services he joined the Brown Equipment Co. as manager of the Springfield, Mass., shop. Coming to the City of Philadelphia in 1948, he spent the next four years as an automotive engineer at the Dept. of Public Works.

MONMOUTH

first with the finest

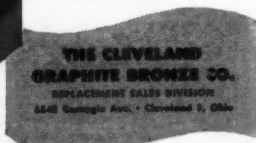


"Touch" tests for tolerances prove bearing perfection

THIS young lady is checking the most important dimension of the bearing—wall thickness! If bearing walls are not uniform within .0003" tolerance, accurate interchangeability is impossible and bearing life may be reduced considerably.

Monmouth Bearings are checked through every step of production from the continuous strip casting line to the final packaging point. This extra care assures the user of unquestionable match of all bearings—from bearing to bearing—a vital factor in prolonging bearing life in the engine.

Yes, Monmouth Bearings, in the bright blue and orange package, meet or exceed every known test for bearing perfection and uniformity.



COB FIRSTS: The development of continuous strip casting, 1929—thinwall babbitt lined steel-backed bushings, 1931—continuous casting of copper lead on steel strip, 1934—tri-metal bearings, 1938—Micro Bearings, 1939—Clevite 77, 1944—and others which have helped to revolutionize the lined bearing industry.

Mr. Wheelock will continue CCJ's cooperation with various technical and business organizations; he will be actively engaged in developing articles covering both truck and bus fields.

Murray Simkins, former technical editor, takes over as managing editor, replacing A. W. Greene who has been named editor of *Distribution Age*, one of the other Chilton publications. Editor Bart Rawson continues at the helm while assistant editor Lester Auchmoody carries on with production activities.

Tunnel Fire Case Reinstated

The case against Boyce Motor Lines, Inc., wherein this fleet was charged by the Interstate Commerce Commission with a violation of safety regulations has been returned to the U. S. Circuit Court for the Third District in a recent decision.

The case grew out of an accident and fire in New York's Holland Tunnel last year in which about 60 persons were injured. The truck line is charged with transporting a quantity of carbon bisulphide through the tunnel in violation of an ICC rule concerning the transportation of explosives and inflammables.

The Circuit Court had dismissed three counts of the indictment because the wording of the ICC regulation was "so vague and indefinite as to make the standard of guilt conjectural." An appeal to the U. S. Court of Appeals by the Interstate Commerce Commission reversed this decision. Under a writ of certiorari the case was reviewed by the Supreme Court which upheld the appeal and ordered that the dropped sections be reinstated.

Twin Coach Engines Available

Twin Coach Co., Kent, Ohio, has announced that it is offering its complete line of 90 to 250 hp engines for sale to all bus manufacturers. This marks a radical departure from former practices as the company has previously built Fageol and Fageol-Leyland engines for use only in its own motor coaches.

Engines made available include units for operation on gasoline, propane and diesel fuel.

Fleet Salesmen Take Training

Twenty-two Associated Transport salesmen for 17 terminals recently completed an intensive two-week sales training course held at the Park Sheraton Hotel, New York City. The program conducted jointly by the Company's sales department and department of (TURN TO PAGE 112, PLEASE)

Pathfinder

STATE APPROVED LIGHTING EQUIPMENT

Points the way to **FLEET SAFETY!**



Pathfinder

SELECTO-SET

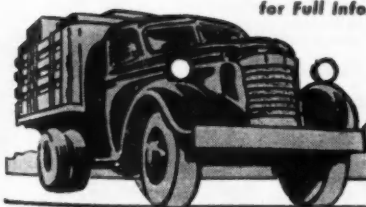
SIGNAL LIGHTS for
light panel trucks and other
delivery vehicles

EASY to install. Three types (flush, fender type and stud mounting) permit you to make sets to fit most light delivery vehicles. Directional signals flash from clear-lens front lights and red-lens rear lights. Automatic, self-cancelling switch cuts off after turn is made.

SET NO. SC4-369 (Illustrated)

Complete with 2 fender-mounting lights with clear lens and 2 fender-mounting lights with red lens, 21 C.P. bulbs, switch, flasher and wire for complete installation.

See Your Pathfinder Jobber or Write Direct
for Full Information — TODAY!



AUTO LAMP Manufacturing Co.
2400 INDIANA AVENUE • CHICAGO 16, ILLINOIS



Illustrated: No. 4301
Fender Mounting Type

Pathfinder

SEALED BEAM...CLASS 1...TYPE "A"

SIGNAL LIGHTS for trucks,
tractors, trailers and busses

Conform to all S. A. E. Specifications!

FLASH 12 square inches of illumination. Self-cancelling switch provides *automatic signal cutoff* after turn is made (also operates manually).

6 SETS FIT MOST HEAVY DUTY VEHICLE REQUIREMENTS
Easy-to-install set is complete with steering post switch and beam indicator, harness, mounting clamps, flasher, inline fuse, all necessary wiring, and full directions for installing. 6 or 12 volt lamps available.

- Sturdy Black Weather-Resistant Enamel Finish
- Moisture-proof — Dust-proof — Fume-proof
- Sealed-Beam GE Units



FENDER
MOUNTING



SURFACE
MOUNTING



FLUSH
MOUNTING

1951 Domestic Truck Factory Sales by G.V.W.*

	5,000 lb. and less	5,001-10,000	10,001-14,000	14,001-18,000	18,001-22,000	22,001-26,000	Over 26,000	Total
January	50,435	21,029	8,476	16,957	8,828	5,657	3,180	109,262
February	43,207	16,940	6,639	14,767	4,076	5,320	3,285	94,634
March	52,948	25,003	9,467	17,967	3,719	5,756	3,305	118,235
April	51,290	21,636	11,179	18,606	5,165	6,304	3,302	117,483
May	52,991	22,062	11,389	19,637	6,092	6,652	3,456	121,461
June	51,390	22,181	7,854	19,296	4,683	6,675	2,830	116,076
July	39,979	18,586	6,364	15,109	3,707	5,060	2,713	91,517
August	42,072	19,579	5,676	16,827	5,376	6,276	3,302	99,007
September	37,208	17,396	5,711	17,385	4,467	4,653	3,633	90,446
October	36,776	16,443	5,271	16,612	4,747	7,627	4,899	92,275
November	31,762	14,664	4,213	14,179	2,839	5,667	2,309	76,663
December	27,795	13,523	3,724	12,736	3,650	6,562	2,644	70,834
12 Months—1951	517,873	229,065	84,183	199,957	53,596	72,339	39,060	1,196,065
12 Months—1950	579,760	243,980	76,993	169,649	42,756	42,149	27,624	1,182,411

* Automobile Manufacturers Association

50,000 miles OF CUSTOMER GOOD-WILL Guaranteed!



Every time you install an Airtex Fuel Pump with the 50,000-Mile Guaranteed Diaphragm, you give a motorist the three things he wants most . . . easy starting, quick get-away, greater mileage! That's why one satisfied customer tells another, why you build steady business through good-will . . . why you make more sales and profits with Airtex!

ORDER FROM YOUR JOBBER NOW!

Also ask for Airtex Anti-Pulsation Fuel Filters. Self-cleaning, porous metal filter disc removes dirt, lint, water.

Equipped with the patented shock absorber Diaphragm, guaranteed for 50,000 miles!



AIRTEX AUTOMOTIVE DIVISION

FAIRFIELD, ILLINOIS

World's Largest Independent Fuel Pump Manufacturer

CCJ News Reports

Continued from Page 110

personnel and public relations was designed to furnish a complete orientation on Company policies and to equip salesmen with a better working knowledge of how to best serve A. T. customers.

The daily sessions which ran from 9 o'clock in the morning until 4:30 in the afternoon were divided into two halves. The first week was assigned to an overall view of the company's history, organization and accomplishments and to a presentation by every department head of the departmental functions. The second week was earmarked entirely for sales matters.

Dugan Heads Training Program

Dan Dugan of Dan Dugan Oil Transport Co., Sioux Falls, S. D., has been named chairman of the national advisory committee for the nation-wide motor fleet supervisor training program. He succeeds Alex Scherer, of the Scherer Freight Lines, Ottawa, Ill.

Charles Ray, vice-president of Markel Services, Inc., Richmond, Va., was re-elected vice-chairman of the committee, and Amos E. Neyhart, head of the Institute of Public Safety at The Pennsylvania State College, was re-elected secretary.

1951 Truck Trailer Shipments*

VANS	November	Eleven Months
Insulated and refrigerated	293	3,613
Steel	100	
Aluminum	193	
Furniture		1,149
Steel		
Aluminum	155	
All other closed-top	1,044	21,865
Steel	555	
Aluminum	489	
Open-top	197	2,858
Steel	96	
Aluminum	101	
Total—Vans	1,689	29,295
TANKS		
Petroleum	391	4,586
All other	102	654
Total—Tanks	493	5,140
POLE, PIPE, AND LOGGING		
Single axle	76	1,155
Tandem axle	69	1,684
Total	147	2,839
PLATFORMS		
Racks, livestock and stake	194	1,795
Grain bodies	65	853
Flat (all types)	678	9,789
Total	927	12,417
Low-bed heavy haulers	364	3,322
Dump trailers	70	1,063
All other trailers	341	3,223
Total—Complete trailers	4,031	57,484
Trailer chassis	247	2,965
Total—Trailer and chassis	4,278	60,479

* Industry Division, Bureau of the Census.

(TURN TO PAGE 178, PLEASE)

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12,417

3,522

1,063

3,223

57,484

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SE)

ch, 1952

BRAKE BLOCKS

IT'S ASBESTOS...

IT'S A LEADER...

FRICTION MATERIALS

COMMERCIAL CAR JOURNAL, March, 1952

Longer Valve Life

Continued from Page 73

found spring caps worn almost to a knife edge. (3) The same condition causing (1) and (2) may wear the spring ends; either one or both ends may have these wear indications. (4) The spring tension itself should be checked with an accurate scale. The high operating-stress level of valve springs, coupled with their high temperature of operation in engines, ac-

counts for pressure loss over long periods of time. Tension loss exceeding 10 per cent of the specified required load should indicate replacement. (5) Another factor which should be noted is the pressure loss, due not to the spring itself, but to the lowering of the valve on the seat caused by grind-in.

As the valve seat is ground deeper,

the spring operating height is progressively longer, and the spring operating loads are lower. When the seat is lowered as much as 1/16 in. or more, it is desirable to re-establish the correct spring operating height by the installation of a spacer washer. Of course, a new valve seat insert should be considered under conditions of this kind. Each 1/32 in. of grind-in accounts for a 5 per cent loss in valve open spring load with new springs, and much more if the old springs, which have taken a set, are re-used. The loss of tension greatly affects the valve motion. At high speeds, false valve motion results in high stresses which are a contributing factor in breakage.

If a new insert is required in an engine, the following suggestions should be followed. If there is no choice except an exact duplicate of the original with the outside diameter increased, it, of course, should be used. In the event there is a choice between a deep and shallow seat, the one with the greatest depth should always be chosen. The deeper seat has been proven to stay tighter and perform longer. In the event there is a choice between a hard iron seat and a hard-faced seat, such as Stellite, the following fact should be considered. Under test, the hard-faced seat has an endurance life of 4 to 5 times that of hard iron. There is also a difference in cost to be considered.

The next important item is the proper amount of interference fit. It should be pointed out that the cavity in the cast iron block should be accurately machined for size, by all means very smooth, with no tool marks. Tool marks will rapidly shear off, causing a reduction in interference fit. The bottom of the cavity should also be smooth and square to provide the largest possible contact with the seat itself. The greater the contact area, the greater the heat conductivity, and a consequent lower seat operating temperature will result.

Even with extreme care and accuracy, there are some disturbing factors affecting the valve seat insert. The unevenness of the water jacket area, scale formations in the water jacket, and the positions of the exhaust port in relation to the insert, as well as installation technique, all have the effect of shifting the seating surface under operating conditions. With an indeterminate amount of shift inherent in the engine it is hardly necessary to re-emphasize the necessity of accurate grinding of the seat for concentricity to the guide inside diameter.

Heavy-duty valves in common usage are of two types: (a) Solid with hard (TURN TO PAGE 120, PLEASE)

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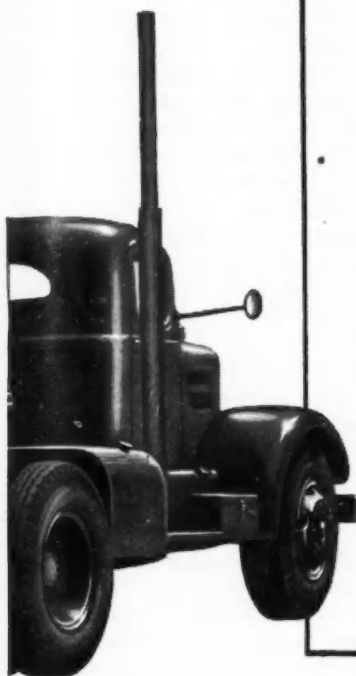
THE only carrier in the United States hauling from coast to coast, Denver Chicago operates over 1000 pieces of equipment and 18 terminals. In 20 years it has become one of the giants of the hauling industry.

"We attribute a large portion of our success to the wide use of Fruehauf Trailers," says W. J. Robinson, President of Denver Chicago. "Our nationwide operations, through all types of terrain, have served as an invaluable proving ground for Fruehaufs. We are completely sold on their durability."



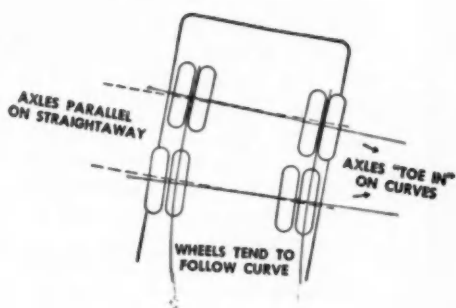
W. J. ROBINSON, President
Denver Chicago Trucking
Company, Inc.

"Our statistics show that the Fruehaufs in our fleet spend less time in the shop. Their low maintenance expense and longer life has been a key factor in holding operating costs to a minimum."



Bet!

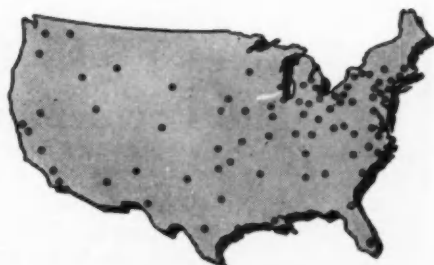
Fruehauf Durasteel Vans Demonstrate Durability on Coast-to-Coast Run



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Owners everywhere report that the automatic steering and alignment features of Gravity Tandem Suspension double and triple their tire mileage! Independent wheel suspension eliminates brake hop and chatter.

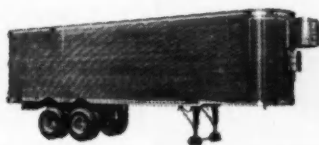
Direct Factory Service
Wherever Your Fruehauf
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Branches From Coast
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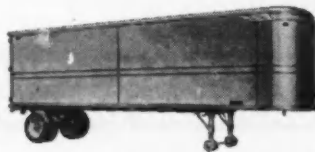
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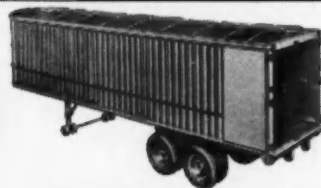
**WORLD'S WIDEST
CHOICE OF TRAILERS
IS YOUR SHORTEST WAY
TO SAVINGS!**



STAINLESS STEEL REEFER



DRY FREIGHT AEROVAN



OPEN TOP DURASTEEL VAN

Longer Valve Life

Continued from Page 116

facing (b) Sodium-cooled with hard facing. Other types having the dome either partially or totally coated with a corrosion resistant material (ni-chrome) have been specified by original-equipment users, but experience has indicated that for the same amount of expense sodium cooling provides the greater benefits.

Sodium cooling normally reduces the

valve operating temperature about 200 deg. F. This valve temperature reduction usually provides conditions for increased valve life. Whenever sodium-cooled valves are available as a Service item, the extended valve life gained through their use usually justifies their increased cost.

Valve rotation is being accepted generally by original-equipment manufacturers and gaining wide favor in the replacement market. The premium paid for equipping an engine with rotation is justified by the increase in trouble-free valve operation. While ro-

tation generally extends valve life two to five times, frequently valve life extension of ten times and more is obtained. Valve rotation extends valve life for the following reasons:

- Valve face and seat are constantly wiped clean—no build-up of deposits to flake off and start valve guttering.
- Stem deposits which cause valves to stick in their guides and to be held open are prevented.
- Effects of distortion due to thermal and/or mechanical factors are minimized.
- Local hot spots that cause burning are prevented.
- The valve tip is prevented from grooving due to rocker arm scrubbing.
- More uniform stem lubrication is provided, and acts to prevent scuffing.

There are three basic types of rotators available today. All three are made available as original-equipment items and two are made available through service outlets for additional applications.

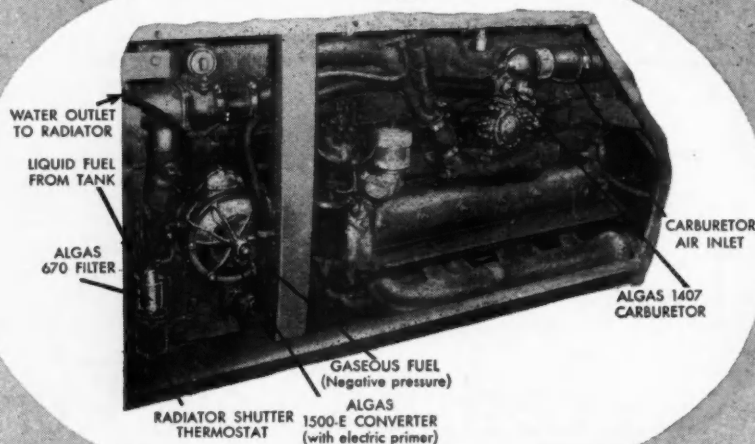
After the engine has been carefully checked, and worn parts culled out and replaced by new parts, the engine is ready for assembly. The valve guide, after installation, is reamed to give nominal clearance. The valve seating surface is ground to a .002 in. maximum runout limit and is cut to the proper width of 1/16 in.-3/32 in., allowing 1/64 in. overhang of the valve outside diameter. An interference angle is accepted practice. With rotation, the interference angle is omitted and the seating surface should be .090 inch-.100 in. wide wherever possible.

Rotation has practically eliminated the need for the time-proven fixes to minimize sticking. Yet, in some installations the guide counterbore and the valve-stem carbon relief are used separately and in conjunction with rotation to cut the stem deposit problem to a minimum.

Premium valves are available for replacement purposes. These, in many cases, are made from different material than the original valve. Differences of as much as 50 per cent in the coefficient of expansion may occur in the different materials and the change in length occurring during the valve heating under load must be accounted for by different lash settings.

Engine manufacturers in their instruction manuals generally indicate a proper hot or cold valve setting. Unless otherwise instructed by the manufacturer, lash adjustment should be made on a thoroughly warmed engine. There is a possible wide fluctuation in the valve lash readings (TURN TO PAGE 123, PLEASE)

This ALGAS Power Package



Gives TWIN COACH Busses The Performance They Need

Tested again and again by the engineers of Twin Coach Company and Fageol Products Company, ALGAS LP-Gas Carburetion Equipment has been selected as approved equipment for all Twin Coach busses. Performance against all other types of LP-Gas carburetion equipment proved that ALGAS was equal to or superior to all makes. You too can rely on twenty years of ALGAS experience that brings you the finest in LP-Gas carburetion equipment. Write our engineering department today about your transportation problems.

AMERICAN LIQUID GAS CORPORATION

1109 Santa Fe Avenue Los Angeles 21, Calif

Longer Valve Life

Continued from Page 120

between a cold and a thoroughly warmed engine. The conditions affecting these lash readings include temperature of the water, oil, block, head, and valve gear. In the example shown, the agreement of lash setting of the exhaust valve hot and cold was purely coincidental and is not indicative of a general condition.

Other engines may show a change in valve lash of .005 in. or more between a cold and thoroughly warmed engine. Setting the valve lash correctly is extremely important. Operating lash will change with load from its hot idle condition. Manufacturers specify lash based on studies made of operating clearances while various load conditions are applied to the engine.

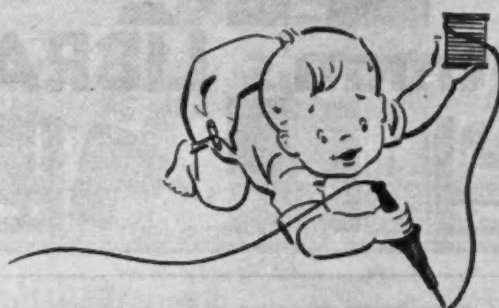
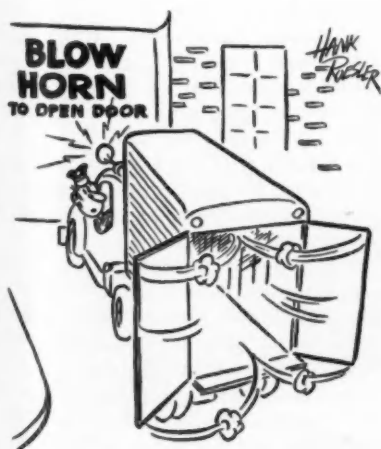
Insufficient operating clearances, whether due to improper lash or lax engine maintenance condition reduces valve life to as little as 25 per cent of normal. Operators realize fully the result of not enough lash, but few realize the result of excessive clearance, which is broken exhaust valves.

Excessive clearances commonly found in the field often result in stresses reaching a magnitude of 3 or more times the normal. This predicts failure. As designed, the valve stress due to seating is sufficiently low with ample safety factor to assure freedom from breakage.

To summarize momentarily the most important factor in good valve maintenance is correct lash. Proper settings may not be responsible for desired valve life, but improper lash can and is the cause of several undesirable conditions, the most important of which are burned and broken valves

END

Please Resume Reading Page 74



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SO SIMPLE to do the best work
with Kester the best Solder

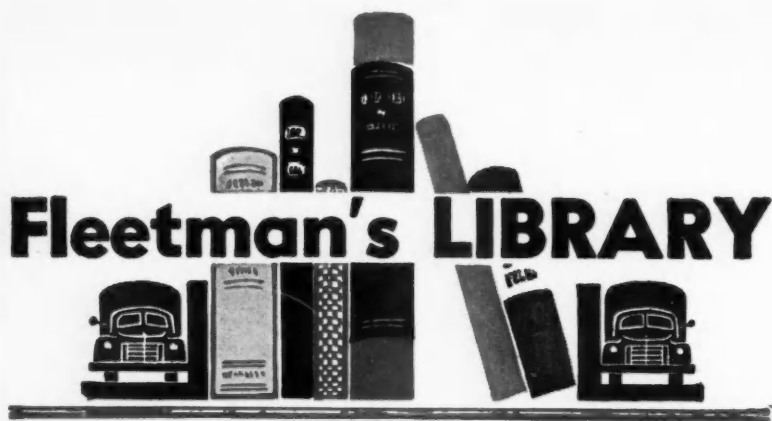
On every job, dollars are spent for labor but often only a fraction of a cent for the solder. The use of Kester, the original Flux-Core Solder, can easily be the difference between profit and loss.

It's so simple to be *sure* with Kester Acid-Core and Plastic Rosin-Core Solders, the products with the same features today that made them worthy of imitation 25 years ago.

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ARE DRIVERS "RAILROADING" YOUR VEHICLES?

Handy Governors Will Stop It

Any driver is likely to be less than meticulous in his care of a vehicle he doesn't own. Many feel no compunction about "railroading" your vehicles. Drivers do most of their work away from supervision . . . abuses are hard to correct.

Handy Governor will stop "railroading"—stop practices which run up costs and wear out vehicles before their time.

The savings in tire, fuel, and lubricant costs, engine repairs, brake maintenance and general maintenance are spectacular. Reduced accident and insurance costs are equally important.

Let us show you some figures on savings—and tell you how little it costs to get them.



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PLANTS AT
ANN ARBOR, SCIO,
YPSILANTI

The trucking industry story is told in an attractive booklet produced by the Empire State Truck Operators and Allied Industries Legislative Committee, 141 Broadway, New York. It is prepared primarily for public consumption as part of the Committee's campaign against anti-truck legislation.

Publicity weapon, now available to fight the ton-mile tax threat, may be had from the National Council of Private Motor Truck Owners, Inc., Kass Building, Washington 5, D. C. It is a bright, two-color folder 4 in. by 8½ in. suitable for mailing as an inclosure with statements, customer letters, or other publicity using a No. 10 envelope. Cost, \$2.00 per 100.

Aluminum Bulletin is the title of a quarterly periodical published by The Aluminum Assn., 240 Lexington Ave., New York. It shows various uses and applications of aluminum in industry.

Film and booklet entitled "Let's Get Out of the Muddle" are being produced and distributed by General Motors. They campaign for adequate roads by presenting a cross-sectional discussion of the present highway system with all of its faults. Both are available at GM branches.

Tire equipment made by Balloon Tire Mould Co., Los Angeles, Calif., is listed and described in catalog No. 16. It illustrates, describes and prices the "Brown" line of tools and equipment for fleet tire repair shops.

Petroleum Dictionary and Handbook, published by the Petroleum Educational Institute, Los Angeles, Calif., lists in non-technical terms about 6000 entries relative to the petroleum industry. It is written for the layman, not actively engaged or trained in the industry and may prove a valuable aid in understanding the various forms, symbols, etc., used in reference to petroleum products. Price \$7.

Data catalog, which gives specifications and sizes of components of truck engines has been released by the Hub City Iron Co., 219 First Ave. SW, Aberdeen, S. D. It lists various specifications, application data, parts numerical lists, size charts, and replacement lists for all major parts of an automotive engine.

Armored panels, suitable for use in many building applications including truck sides are described in a brochure "Rigidized Metal Armormply." The booklet is published by United States Plywood Corp., New York.

Reference book for the transit industry has appeared in a 235-page volume published by the Press of Western Reserve University. "Principles of Urban Transportation," edited by Frank Homer Mosman, Ph.D., associate professor of general business at Michigan State College, covers the history and operating principles of the industry from its beginning.

"Horsepower Insurance," a booklet just published by the Detroit Diesel Engine Division of General Motors, covers various design features of the GM 2-cycle diesel engine, action photographs of installations in the construction, transportation, marine, mining, oil well drilling, agricultural and industrial fields.

Cleans Carburetors

"on-the-engine"

in less than 20 minutes

It's here, now . . . the answer to a major maintenance problem . . .

GUMOUT — the proven method for cleaning carburetors "on-the-engine" in less than 20 minutes

Carburetors should be cleaned and serviced regularly, but seldom are because of the "down time" and expense involved. Yet a speck of gum or muck in any of the 16 tiny carburetor passages can cause a host of motor troubles . . . hard starting, low power, high gas consumption and irritating exhaust odors.

Now you can use GUMOUT to clean carburetors on your vehicles at regular intervals. *Immediate results are guaranteed!* Remember, only GUMOUT can clean carburetors "on-the-engine", and in less than 20 minutes.



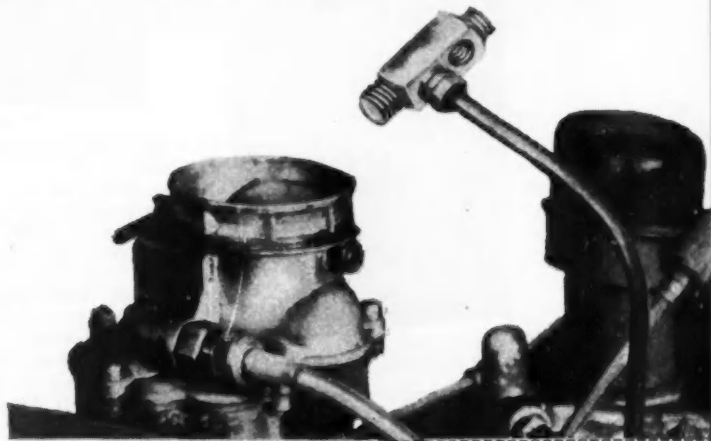
Don't clean carburetors the slow, old-fashioned manual way. Use GUMOUT and the GUMOUTER . . . and clean carburetors internally at a cost of less than 90 cents. Order from your jobber today or send coupon.

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- ☐ Cases of GUMOUT (24 pints each) @ \$21.60 per case
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CCJ-1





Work Frame

Rolls Entire Bus Body

▼ A BODY repair plant at Aldenham, North London, England, has found a fast way to work on the bodies of London's buses. During a complete overhaul, the body is unbolted and mounted on the circular frame as shown above.

With cleaning operations, the body may be rolled to the desired work height, giving the repairman or cleaner opportunity to work at the most convenient level. As shown above, for steam cleaning, the jet is at shoulder height.

The same rig may be used for painting operations. The painter positions the side or top of the bus so that he may use either brush or gun without a ladder or scaffolding.

One point is made clear by London Transport, however, "... the inverter is used only for overhauls and not for normal servicing of the vehicles.

"The equipment is of our own design and its purpose is to enable many operations to work simultaneously on both the roof and underside of the vehicle at floor level and with a vertical working surface.

"The operator's movements are thus natural, as he is neither working above his head nor leaning from a ladder or gantry. Furthermore, the work is made easier in that the vehicle is clear of all obstruction from pit sides or the ramps and girders of a hoist.

"The inverter is also used for steam cleaning of the underside which work can therefore be carried out at floor level where the problems of ventilation and dirt collection are simplified.

"So far as costs are concerned, even when made in small numbers, the cost of an inverter is roughly the same as that of the normal type of pit.

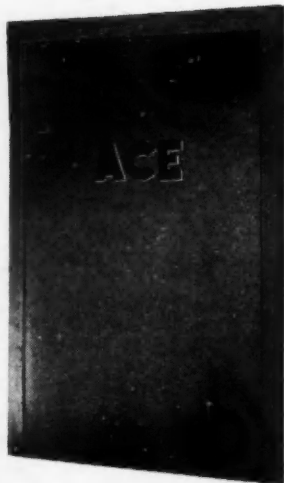
"London has about 7000 buses, 5000 of which are new since the war. The buses operate normally about 12 or 13 hours each day and are serviced on a developed PM program. Every three years, the bus is turned over to the body repair shop, where it is dismantled and completely overhauled. The normal life span of a London bus is 15 years.

"The inverter operates from a worm drive located at its base. The turning gear is driven by an electric motor which the operator runs from a push-button control."

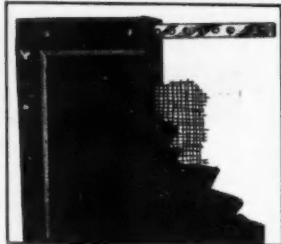


TRUCK FENDER FLAPS

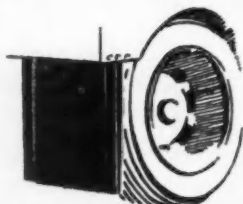
TRUCKER ENGINEERED — LAST LONGER
Meet all state requirements — Used by leading fleets



Note the tapered design, illustrated in cross-section, side view. Tapering distributes flexing action and prolongs life of flaps. Tapered reinforcement rib, top and sides, gives maximum "wind bend" resistance. Bottom has "slip edge"—no rib to hold mud or ice.



14 gauge perforated steel strip molded into top as anchor bar • Rubber, molded through perforations, bonds steel securely in place, can't slip • All flaps molded of quality rubber, impregnated with chopped tire cord • Optionally available with reinforcing sheet of strong fabric between layers of rubber, full length and width.



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Naturally
They're
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They're
Brake
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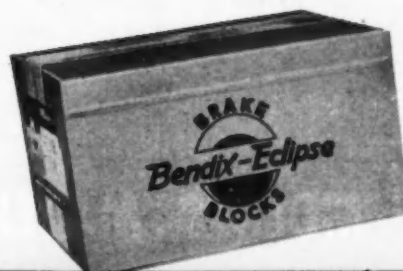
* **BRAKE ENGINEERED** . . . means that Bendix Eclipse Brake-Blocks are a product of America's oldest and largest manufacturer of air, vacuum and hydraulic braking systems . . . it means that Bendix Eclipse Blocks are produced by the men who actually design and build the brake equipment used on many of the leading passenger cars, trucks, buses, tractors, planes and even bicycles . . . it means that Bendix Eclipse Blocks are backed by a combination of research, development and production facilities that can be found nowhere else . . . it means better performance on the road, less down-time and increased savings. Remember Bendix Eclipse Brake Blocks are Brake Engineered!

**MARSHALL-ECLIPSE DIVISION OF
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Look for the blue Bendix Eclipse label . . . it stands for the best in braking! It is your guarantee of maximum performance on every re-line job. It means properly balanced block sets for every truck or bus make and model, every load requirement because it is backed by America's first team of brake specialists.



Bendix Eclipse BRAKE BLOCKS

BUILT BY AMERICA'S FIRST TEAM OF BRAKE ENGINEERS

Cummins Adds 200 HP Horizontal Diesel

THE Cummins Engine Co., Columbus, Ind., has announced the availability of the new horizontal 200 hp model NHHB diesel for bus applications.

Arranged with horizontally opposed cylinders, this engine is of "flat" or "pancake" type. The crankcase is of alloy cast iron, integral with the cylinder block and fitted with removable wet-

Condensed Specifications

Type	Valve in head
No. Cylinders	6
Bore (in.)	5 1/8
Stroke (in.)	6
Displacement (cu in.)	743
Bhp (max)	200 @ 2100 rpm
Torque (max) lb ft.	535 @ 1200 rpm
Compression Ratio	15.5 to 1
No. Main Bearings	7
Weight (lb)	2285

type liners. Cylinder heads are cast in pairs, contain Stellite exhaust valve inserts.

The crankshaft is of seven-bearing type with Tocco-hardened journals; and is dynamically and statically balanced within two-oz in. It is fitted with the Houde viscous type vibration damper. Main bearings, of 4 1/2 in. diameter, are of interchangeable type with steel shell and copper-lead alloy lining. They have a continuous oil groove to assure even distribution of lubricant.

Valves are located in the head, with two intake and two exhaust valves per cylinder. Both intake and exhaust valves have a 1 3/4 in. diameter head, valve lift for exhaust valves being 0.420 in. Valve timing is as follows: Inlet: opens 20 deg BTC; closes 50 deg ATC. Exhaust opens 55 deg before bottom center, closes 25 deg after top center. Injector timing is arranged for injector travel starting 50 deg BTC, injection ending 20 deg after top center.

Connecting rods are of alloy steel forgings, heat treated, and rifle-drilled for pressure lubrication to the full floating wrist pins. Pistons are of aluminum alloy with cam-ground skirt, fitted with three compression rings, one oil ring. Camshafts are of drop forged steel with seven, 2-in. diameter bearings. Bearings and cams are carburized and ground. Timing gears are of helical type, made of high alloy steel and heat treated, with face width of 1 1/4 in.

The fuel pump is the Cummins DD, double disc type, with a single-plunger for metering the fuel to all cylinders. Maximum fuel pressure is in the range of 120-180 psi.

The engine is fitted with a mechanical flyball governor built integral with the fuel pump. The governor has two speed control springs—idling or no-load control; and maximum speed control, non-adjustable. It is adjusted at the factory for a maximum speed of 2100 rpm, provides regulation in the range of 5 to 8 per cent.

Because of the nature of the design, the engine employs dry sump lubrication with full pressure feed to all bearings through rifle-drilled passages. The oilpan is of aluminum. The pump is of gear type, mounted outside the gear case housing. A pressure regulating

DID YOU KNOW?

DID YOU KNOW?

It took a champion mountain climber exactly thirty six minutes and twenty-two seconds to climb the 2240 steps from the street to the top of the Empire State Building.



MOLD-BLOK

BRAKE LINING

Did you know that years of research and experience in the heavy-duty braking field have gone into Mold-Blok? It is available in a friction range necessary to give you the best possible service. Specify Mold-Blok Brake Blocks for all jobs—old and new—it is a thoroughly dependable product.



Specify
MOLD BLOK

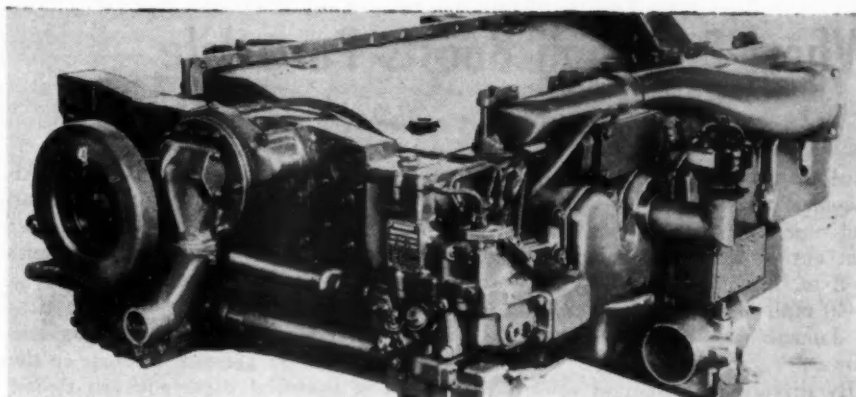
MOLDED MATERIALS DIVISION

OF

CARLISLE CORPORATION

RIDGWAY, PA.

Front view of new Cummins horizontal type diesel—Model NHHB-600. The fuel pump and governor assembly is at the right; the water pump at the center; the oil pump directly below the viscous damper at the left



valve protects both filter and engine from excessive pressures. The oil strainer, mounted in the pressure line, is provided with a removable and easy to clean element and contains a built-in by-pass valve.

Cooling is by means of a centrifugal type, gear-driven water pump, water being introduced through metered openings. Thermostats are provided for main and radiator by-pass flow control. The engine also is provided with a water-cooled oil cooler provided with an oil pressure by-pass.

Delco-Remy 12/24 volt electrical equipment is supplied with 24-volt starting motor; 12-volt, 50-amp generator; voltage regulator; push-button starting switch.

The White Motor Co., Cleveland, Ohio, is standardizing on the NHHB-600 in its new 44-50 passenger transit bus, Model 1100D. ACF-Brill, Philadelphia, is offering the Model 1041 highway coach with the NHHB-600 Cummins diesel.

Schools Use "Lift Gates"



The public schools of Peoria, Ill., have two buses equipped with Anthony "Lift Gates" loading and unloading of the handicapped children now attending classes. This equipment is being used on both Grade and High School buses.

The unit provides a hydraulic-powered elevator which raises and lowers the children between the sidewalk level and the floor of the bus. When not in use, the "gate" folds up and closes with the rear door. It can be lowered instantly should the rear door be needed as an emergency exit.

THOMSON the most complete line in the business!



Used as original equipment by major car manufacturers

● The *right* part for every car or truck—that's old stuff in some parts lines. But it's *news* in thermostats . . . and Thomson has it! The Thomson line is the most complete in the business . . . 65 first-quality numbers . . . coverage of practically every car, truck, bus, tractor and engine on the road today. And that includes the *big* trucks and the *big* engines. When you buy stats, buy from the jobber who has them all—your Thomson Jobber!

STANDARD-THOMSON CORPORATION • DAYTON 2, OHIO

Thomson
Thermostats

Wheel Balancing Boosts Parts Life

Continued from Page 51

ance that is not noticeable at 10 mph becomes four times greater at 20 mph and nine times greater at 30 mph. If that out of balance has but a weight of 8 oz, it will have an impact force at 40 mph of 52 lb. You can do a lot of damage with a lot less than 52-lb blows.

By driving our program toward reducing vibration during the past two

years we have reduced our overall maintenance costs on bodies, tires and underneath parts not less than 15 per cent. Broken down to individual units we have in some cases obtained as much as 50 per cent more from tires by balancing and daily checking and as much as 35 per cent increase in the life of essential parts such as tie-rod ends.



Route your trucks the shortest way every trip. The time and gas used by your drivers looking for unknown streets, driving all around Robinson's barn to make deliveries, will buy a hundred maps like Hearne's Street Map of your city and county area.

Street names are in big, black type, and instantly spotted with Hearne's patented, automatic Street Finder. And every map is mechanically indexed.

Over 100,000 truck owners use Hearne maps every day to give customers better service and cut truck mileage. Many users claim they save the cost of the map in a single day's use.

YOUR CITY MAP FOR 10-DAY FREE TRIAL

Send for cloth, cellophane-finished 44" x 65" map now. Stop delivery waste. Mark routes in crayon we supply. Washes off instantly. Use map for 10 days. Then, if you can get along without it, send it back... or send \$42.50 and it's yours.

MAIL TODAY OR USE YOUR LETTERHEAD

FREE EXAMINATION ORDER FORM

Hearne Brothers (America's Largest Manufacturers of Commercial and School Maps)
23rd Floor, National Bank Bldg., Detroit 26, Michigan.

Without obligation on my part, send me a map of my city and county area. After 10 days' FREE use in my office I'll return the map or remit \$42.50. Prices on cloth, cellophane, spring rollers, stainless steel and labor are going up! Order today!

Your Name _____

Company _____

Address _____

City _____

Zone _____

State _____

When you consider the modern bus and its engine, you must admit that it's a pretty smooth running outfit—up to a certain point and if nothing goes wrong. Because all bus routes have their share of chuck holes, streets under repair, excavations for utilities and other street conditions that account for rough going, it is easy to attribute all abnormal characteristics to the terrain over which the vehicle must run. Add to this some curb scuffing and unbalanced loads.

Most components in the modern bus can handle a lot of this in their stride—parts are built for tough work—but vibration is an enemy that takes its toll. Whip abnormal vibration and you'll head your costs down. Vibration, even just a little more than normal vibration, shortens the life of tires, bodies, springs, tie-rod ends, steering gear parts, shock absorbers.

Much of the value of such a program is well known to experienced bus maintenance men and it then becomes a problem of how to fit this extra work into an already crowded schedule as well as how to find room for extra equipment.

Alignment System

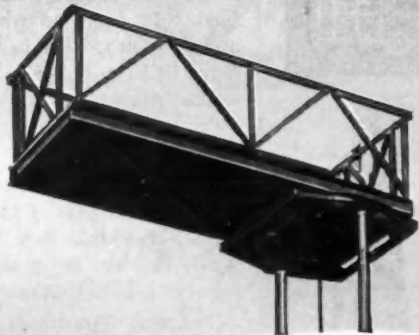
WE developed a system of frame and front-end alignment that didn't take up any extra space. I made four heavy stands about 2 ft high and 3 ft long out of heavy I-beam steel and angle iron. I put one under each wheel after the bus was raised on our twin-post lift. By lining up these four stands parallel and square I had an excellent frame checking machine; we use it for that whenever a frame is to be checked.

In front-end alignment we set one of the stands under each wheel and lower the twin-post lift so the bus is resting on the stands. We needed a means for bending the axle to adjust the camber so we made two large U-straps out of ½-in. by 3-in. steel, which we loop over the front axle. They come within a foot of the floor. There are holes in each of the ends for a bolt which supports a length of railroad rail used as a beam for resting a 10-ton hydraulic jack. This jack is placed between the railroad rail and the bottom of the axle.

We have, of course, already checked the front wheels with a regular camber gage to determine if they need an increase in camber. With the information at hand, we increase the pressure on the jack until the axle has been bent to give us the proper camber adjustment. We check toe-in at the same time. This is easily accomplished by setting a smaller jack on an I-beam stand and raising each front wheel for scribbling.

(TURN TO PAGE 132, PLEASE)

"The Accepted Standard with Utilities Everywhere"



Proved by many years of trouble-free service, *Powers-American* bodies set the pace as the number one choice with utilities everywhere ... the measurement of top quality and performance throughout the industry. "Job-engineering" steps up crew efficiency, lowers operating costs ... protects your investment. *Powers-American* has the type body and equipment to do your particular job most efficiently and at lowest cost.

HYDRAULIC TOWER

Platform extends to 30' above ground and can be revolved full 360°. Operation is controlled from truck cab or by workman on platform. Models are also available in ground-to-platform heights of 21' and 25' for installation on chassis having a rated capacity of 1½ tons or more.



POWERS



American

DIVISION

PUBLIC UTILITY BODIES AND EQUIPMENT

McCABE-POWERS AUTO BODY COMPANY
5908 North Broadway, Saint Louis 15, Missouri



LINE CONSTRUCTION BODY (600)

Available in 9' to 14' lengths, equipped to meet individual needs in any phase of utility work.



REVOLVING AERIAL LADDER

Models available in working heights of 23' 6", 26' 6", 30' 6", and 32' 6" for all styles of bodies.



LIGHT CONSTRUCTION BODY (SERIES 35)

Ideally suited for all types of light duty maintenance and construction work.



MAINTENANCE BODY (400)

Designed for medium duty general service. May be furnished with winch and derrick capable of handling 40' poles.

There are many styles of *Powers-American* Bodies not shown here. Write for descriptive catalog today.

BOWSER FLEET FUELING SPECIALISTS

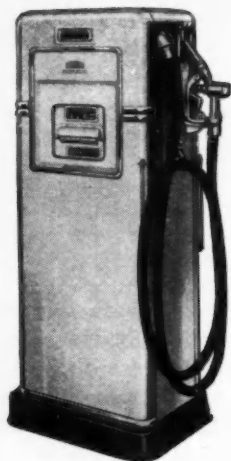


HI-SPEED TICKET PRINTER

Wherever trucks or buses operate on tight schedules . . . where valuable fueling time is saved every day . . . and where printed tickets are used to show the exact amount dispensed to each vehicle . . . there you'll usually find a Bowser HI-SPEED TICKET PRINTING PUMP on the job!

YOU CAN'T FORGET THE TICKET

No fuel can be dispensed without inserting a bona fide ticket . . . and the pump must be shut off after each delivery before the ticket can be printed. Then the pump locks automatically until the next ticket is inserted.

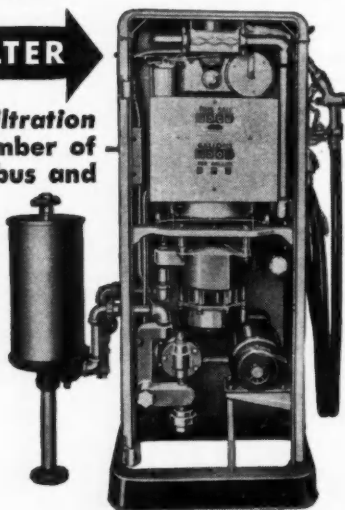


HI-SPEED with MICRO-FILTER

This Bowser pump combines micro-filtration with hi-speed fueling to bring a number of new operating economies to diesel bus and truck fleets.

Replaceable cartridges remove micronically small particles not possible with conventional filtering media. Clogged injectors are a rarity . . . there's less engine wear . . . downtime is reduced . . . overhauls are farther apart.

The pump is available in computing, non computing or printing models.



Hi-speed Bowser pumps deliver up to 25 g.p.m. All models can be supplied for remote control operation. Higher capacity systems available when needed.



UNI-PASS FUEL DEHYDRATOR

Here's real performance insurance for diesels! The Bowser Uni-Pass dehydrator effectively removes water from diesel fuel . . . keeps injectors from sticking . . . retards carbon formation and corrosion . . . improves combustion.

If you have a fueling problem, we probably have the answer. May we send complete data?

BOWSER, INC., 1361 Creighton Ave., Fort Wayne 2, Ind.

Regional Offices: Atlanta, Chicago, Cleveland, Dallas, Kansas City, Los Angeles, New York, San Francisco, Washington, D. C., Hamilton, Ont.

Wheel Balancing Pays

Continued from Page 130

While we hold camber, caster and toe-in to almost all factory specifications, we find that one degree camber is almost standard for all of our buses. Caster is good anywhere between $\frac{3}{4}$ and $1\frac{1}{2}$ deg. Toe-in we maintain at from $\frac{3}{16}$ to $\frac{1}{4}$ -in. Mainly here we watch that we have toe-in and that we're not running at zero or any degree of negative toe-in.

When the job is done, the stands are removed and placed in a stack nearby where they take up but little room. While the bus is on the lift it gets its regular lubrication and tire check.

The tire department and the balancing machine is nearby so there is little lost motion in getting the tires serviced. We own our own tires and there are many different brands in our fleet of 63 buses and 23 trucks. Each tire is branded WCF&NRR and numbered. We figure that systematic balancing of wheels pays for itself and turns in a substantial dividend besides.

While we do not rotate, we check air pressures every night. Treads are checked and cleaned each 1000 miles when the bus is lubricated. At this time we also check for thrown weights and clues to uneven wear. Treads are examined for scuffing and signs of abnormal tread wear. Any hard steering complaints from drivers are also investigated. Any suspicious circumstance leads to a check on the tire balancing machine.

All tires removed for repairs are balanced for both static and dynamic vibration. With all of these things, front end alignment and wheel balancing, all in the category of reducing unnecessary vibration, we have increased our tire mileage as well as that of all the parts that can be damaged by constant vibration. In addition, road failures have been cut appreciably.

We recap three times on most of our tires. Recaps are usually called for at 34,000 miles. New tires on our fronts, however, after balancing are now running an average of 52,000 miles. They are then recapped and start on a 34,000-mile tour of duty and some of them get into the second recap. This adds up to an average of 86,000 miles with one recap for front tires.

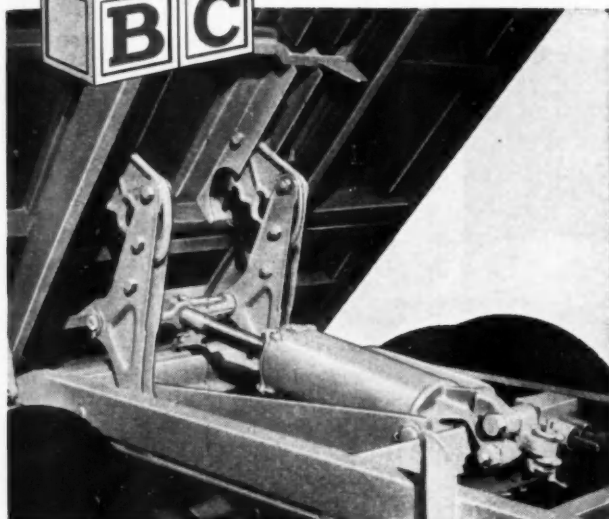
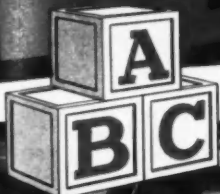
END

Please Resume Reading Page 52

Always?

Rotund Reuben, the shop roustabout, says that most of the time he can look into a girl's eyes and tell what she's thinking—and it's mighty darn discouraging.

IF IT'S GALION EQUIPPED *It's Right* ON THE JOB!



Ask an operator of Galion equipped dump trucks what he thinks of Galion hydraulic hoists and allsteel dump bodies. Chances are he will say: "They're *right* on the job!"

And that's as good a recommendation as any . . . and it's language anyone can understand.

But why not check up on Galion equipment when next in the market . . . get the low-down on Galion's famous ABC combination . . . where an exclusive Fulcrumatic lift ACTION unites with perfect operating BALANCE and quality CONSTRUCTION to provide top performance for a long, long time.

There's a Galion distributor right near by, ask him to demonstrate equipment that will be *Right on Your Job!* No obligation.

Scientifically positioned fulcrums and transfer linkages automatically "shift" the load at different points, eliminating lift-shock and smoothing out lifting action throughout the dumping cycle. The result is longer hoist, body and chassis life . . . better dumping performance!

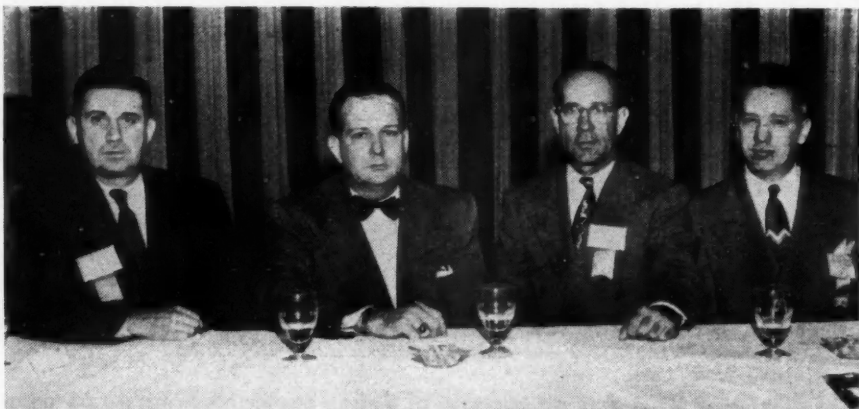
Sales and Service
FROM
Coast to Coast

GALION
ALLSTEEL BODY COMPANY
GALION, OHIO

A exclusive hoist
Action
B perfect operating
Balance
C proved quality
Construction



MAKES A WHALE OF A DIFFERENCE THE "WEIGH" IT LIFTS



Trailer Builders Get Together

Left: Newly-elected officers of the TTMA include, left to right: R. C. Tway, Kentucky Mfg. Co., eastern vice president; W. E. Grace, of Hobbs Mfg. Co., president; and T. C. Brown, of Brown Trailers, Inc., western vice president

NOW IT'S EASY-
to order exactly the Joint you want
from the simplified Neapco Catalog!



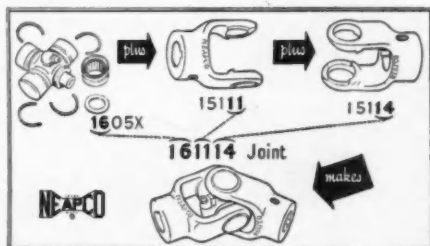
1500 Series
Plain Bearing



1600 Series
Needle Bearing

SIMPLIFIED NUMBERING SYSTEM

There is a Neapco size for nearly every light duty P.T.O. requirement. Ordering the *right* size is made easy because the number of the complete joint is simply a combination of the numbers of the three major components from which it is assembled. This allows you to make your own combination of length, bore, and type—quickly, accurately.



This diagram shows a typical joint combination—**1605X** journal assembly plus **15111** end yoke plus **15114** end yoke makes a **161114** Joint. It's that easy!

CATALOG: Not shown in this ad, but included in Catalog PT15B are unwelded center Assemblies and Rectangular Telescoping Center Assemblies. Copy of Catalog free if requested on your business letterhead. It's a valuable book!

NEAPCO POWER TAKE-OFF JOINTS
UNIVERSAL

NEAPCO PRODUCTS INC. · POTTSTOWN, PA.

DURING the closing days of January, approximately 250 members and guests of the Truck Trailer Manufacturers Assn. broke all previous attendance records for the group's annual convention. Meeting at the fabulous Shamrock Hotel in Houston the mood was frankly festive but proved once and for all that it is perfectly practical to combine business with pleasure. Very definitely the basic theme for the meetings was full and complete cooperation with truck and trailer users.

Refrigeration Round Table

ONE of the most interesting discussions centered around recent tests conducted by the Dept. of Agriculture on refrigerated motor transport. Harold D. Johnson of the Department's Marketing and Facilities Research Branch was on hand to tell the trailer builders and suppliers that present-day refrigerated transport leaves something to be desired. Also present were Messrs. Chase and Scales of Red Arrow Freight Lines, Houston, to discuss the fleet operator's point of view; and several representatives of insulation and refrigerating equipment suppliers.

It can be said in quick summary that there was considerable evidence to indicate that not all trailer builders or suppliers present knew much about the subject as they might. Admittedly, few are specializing in this field, but most have an interest in it.

Action Briefs

AS further evidence of direct cooperation between the trailer builders and the truck industry, the convention: Received inspirational comments from Walter Mullady, president of American Trucking Assns., Inc.;



Above: At the speaker's table, left to right: John B. Hulse, TTMA managing director; E. J. Lucas, of NPA; Walter F. Mullady, ATA president; L. C. Allman, outgoing TTMA president; Rev. John Knolls, of Houston; C. L. Schneider, Fruehauf Trailer Co.; George R. Davis, of NPA; and L. T. Altobell, of Ordnance Tank-Automotive Center, Detroit

Got first hand information on military procurement practices from L. T. Altobell, chief of trailer procurement, Ordnance Tank Automotive Center, Detroit (most salient comment: government economies through purchase of standard units);

Discussed procurement problems with George R. Davis and E. J. Lucas of the Motor Vehicle Division, NPA;

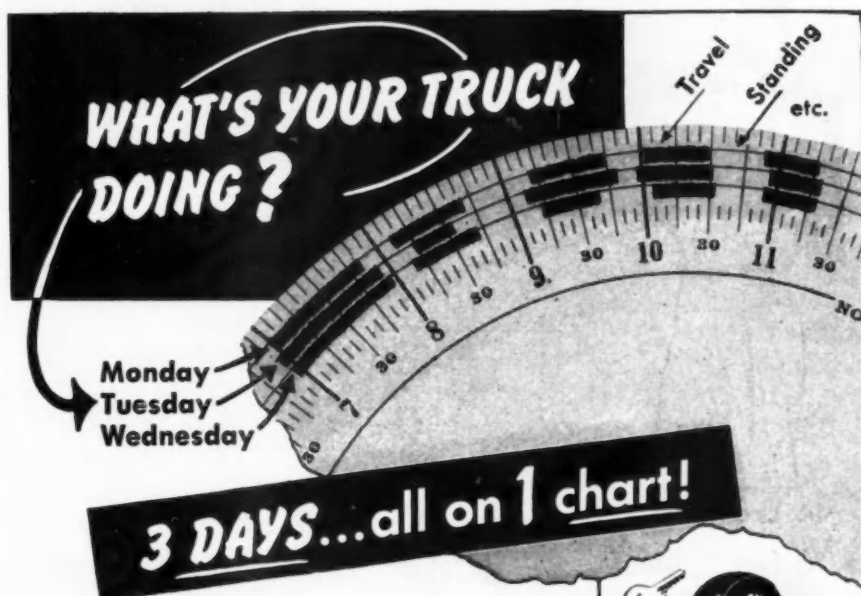
Blasted the ton-mile tax with a resolution citing that such a plan was "discriminatory because it fails to measure variations in tonnage . . . to measure the cost of road resulting from vehicle use . . . and to consider the factor of space requirements of different vehicles";

Pledged full-hearted support to "Project Adequate Roads" (see page 72 this issue and page 64, December, 1951); and

Urged Senate and House committees to "exercise extreme caution in tampering with existing regulatory law . . . under which the distribution system of the country functions with an efficiency superior to any found elsewhere."

Kick-Off Dinner

NO discussion of the convention, however brief, would be complete without mention of the dinner on opening night during which all in attendance were guests of the Hobbs Manufacturing Co. of Ft. Worth, and its president, M. J. Neeley. It was an affair that symbolized in one act both the hospitality of Texas and the cooperation among members of the truck trailer manufacturing industry.



Mr. Truck Owner—

That's what we offer you.

Servis Recorder, Model TRT, records the travel time—the busy time—of your truck for 3 days, and 3 nights, on one chart.

Think of it! You wind the clock, put in the chart, turn the key in the Yale lock, and never touch it again for 3 days!

A big chart it is, too, 6 inches in diameter . . . a large-scale record . . . no need to squint, or use a glass.

Over the week-end: You can still change charts daily if you want to, but when the week-end comes along this Model is able to take care of it.

Now isn't this the obvious way to manage motor trucks? Write for full information. The Service Recorder Company, 1375 Euclid Avenue, Cleveland 15, Ohio.



SERVIS RECORDER
Model TRT
(3-Day Model)

It's the same simple instrument, attached to the truck the same simple way: just 3 screws or bolts. "You could nail it on and it would work."

7-day MODEL

Where necessary it is available, at extra cost.

The Servis Recorder

TELLS EVERY MOVE YOUR TRUCK MAKES



INTRODUCING . . .

... LLOYD A. SEVERTS, recently appointed district sales manager for the Pacific Northwest, the Marquette Mfg. Co., Minneapolis, Minn. Mr. Severts will have offices in Seattle, Wash.

... ROBERT G. BROOKS, elected president of the National Seating Co., Milwaukee, Wisc.

... ALLISON K. SIMONS, chief engineer of the Bostrom Mfg. Co., Milwaukee, Wisc.

... F. N. COYLE as automotive division representative for the New York City territory of the Martin Senour Paint Co., of Chicago.

... ROBERT E. TEMPLETON, as central regional manager of Highway Trailer Co., Edgerton, Wisc.



... ROBERT W. SUTTON, as assistant chief engineer of the automotive carburetor engineering department of Eclipse Machine division, Bendix Aviation Corp., Elmira, N. Y.



... CARL L. KAHLERT, as executive director of the Toledo Steel Products Co., Toledo, Ohio, a division of Thompson Products, Inc.

... FRED SCHUCHMAN and JAMES E. SEIFERT as field sales managers for Hypressure Jenny division, Holmstead Mfg. Co., Coraopolis, Penna., and Garrett E. Winner, as the sales promotion manager.

... C. D. KEEGAN, as assistant to the industrial relations director, Highway Trailer Co., Edgerton, Wisc.



... I. M. HAGGLUND, as manager of the sales department and G. W. POLLARD, as service manager, Detroit Automotive Products Corp., Detroit, Mich.

... WILLIAM K. SMITH, Texas manager for the automotive division, Martin-Senour Paint Co., with offices in Dallas.

... CLINTON F. ROBINSON, president and director of the Carborundum Co., Niagara Falls, N. Y.

... T. J. MILLER, as technical manager, Automotive Trades section, Minnesota Mining and Manufacturing Co., St. Paul, Minn.

... HELMUTH G. BRAENDEL, director of engineering and production, Wilkening Mfg. Co., Philadelphia, Pa.

(TURN TO PAGE 138, PLEASE)

COMMERCIAL CAR JOURNAL, March, 1952

IF THE HINGE YOU WANT ISN'T HERE

THERE'S A STRONG POSSIBILITY YOU'LL FIND IT IN OUR CATALOG

NO. 5828

NO. 5829

NO. 5832

NO. 5864

NO. 5833

NO. 5841

NO. 5866

NO. 5814

NO. 5813



Eberhard offers a complete line of truck body hinges, designed and made to withstand the wear and tear of abnormal usage. Write for the Catalog. Refer to it for all your automotive hardware needs.

EBERHARD *Long Run*
TRUCK BODY FITTINGS



EBERHARD MANUFACTURING CO.

Division of the Eastern Malleable Iron Co.

EVARTS AVENUE

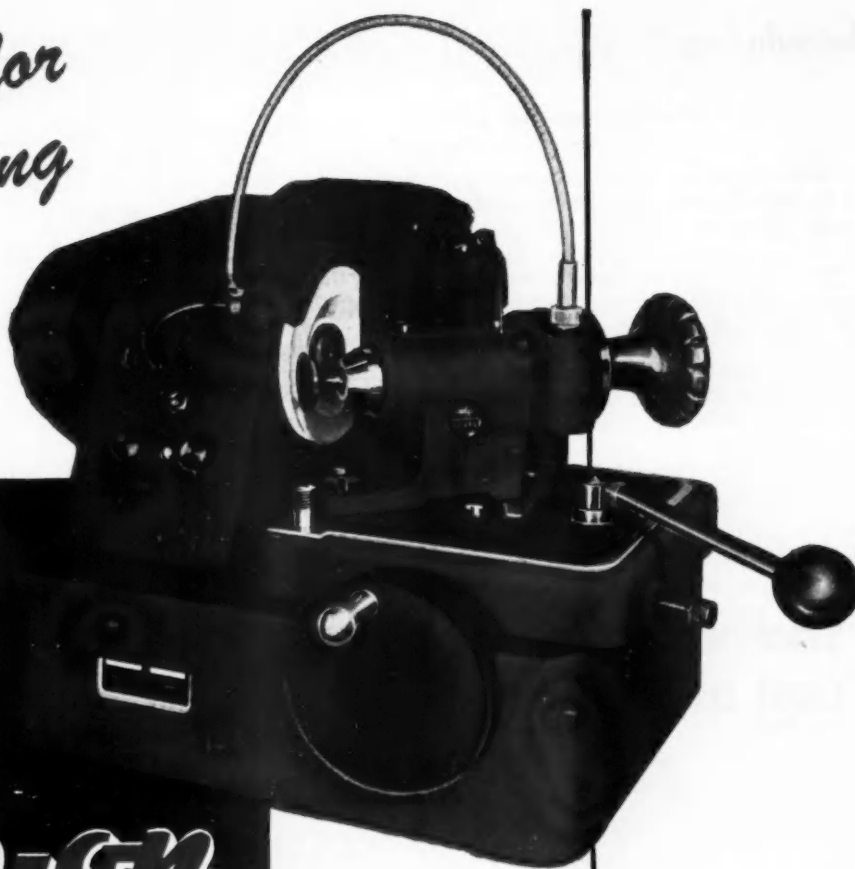
CLEVELAND, OHIO

*here's the one for
money-making
valve
servicing!*

NEW

Snap-on

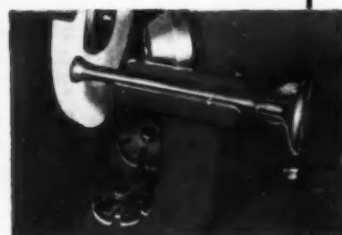
Wet Valve Refacer



● **FAST—ACCURATE—LOW COST**... this is the Refacer thousands of shops have wanted. It gives you Snap-on quality through and through. It gives you the precision features of more expensive machines. It gives you operating simplicity that means speedy, accurate conditioning of valves, valve lifters, rocker arms in cars, trucks, tractors, other engines.

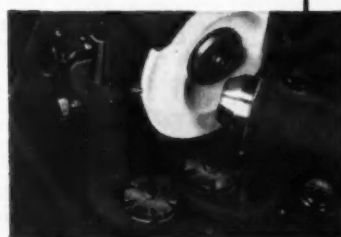
This new Refacer grinds wet or dry—refaces valves up to 3½". Collet-type workhead with controlled speed fits valve stems ⅝" to ⅞". (This size collet standard, other sizes available.) Powered with ⅓ or ½ H.P. motor.

Your Snap-on Man will gladly arrange a demonstration of the Refacer right in your own shop. For special descriptive literature, write Snap-on.



V-REST for butt grinding fits in place of rocker arm attachment. Finger pressure holds valve in V-Rest.

ROCKER ARM grinder attachment fitted with two self-centering cones which adapt the attachment to all sizes of rocker arms.



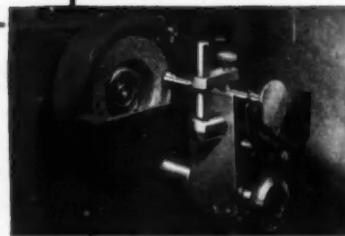
DIAMOND WHEEL DRESSER fits on rocker arm attachment and dresses both face and side of wheel. Diamond tipped screw is replaceable.



SNAP-ON TOOLS CORPORATION

8026-C 28th Avenue
Kenosha, Wisconsin

MICROMETER BUTT GRINDING attachment (optional) for Ford valves without adjustable valve lifters. Includes micrometer feed assembly, 46-grit wheel and guard, coolant hose, valve depth gauge.



*Snap-on is the trademark of Snap-on Tools Corporation.

COMMERCIAL CAR JOURNAL, March, 1952

Introducing

Continued from Page 136

...FRED A. RUETER, eastern sales manager of Malsbary Mfg. Co., with offices in Pittsburgh, Penna.

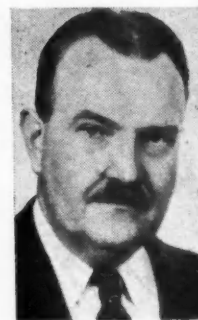
...L. P. MCCARTHY, manager of manufacturers sales, Willard Storage Battery Co., Cleveland, Ohio.

...E. E. WESSELHOFF, assistant chief engineer, Morse Chain Co., Detroit, Mich.

...MICHAEL C. TURKISH, chief engineer of the coil spring division, Eaton Mfg. Co., Detroit, Mich.

...Several promotions and appointments in the New York district sales organization of the Ford Motor Co.: ROBERT J. COPP, assistant district sales manager, line; FRANK J. SCHAFFLED, assistant district sales manager, staff; P. A. BRESCIA and C. F. GREEN special field managers; R. H. DUFLON, used car manager; E. T. CIRINO, field manager, Connecticut; A. L. DEGELMAN, parts and accessories representative, and H. M. CASHMORE fleet sales representative.

...STEPHEN J. TOTH, manager of the factory branch of Trailmobile, Inc., in Toledo, Ohio.



...R. H. GALE, as sales promotion manager of Eaton Mfg. Co., Cleveland, Ohio, to fill the vacancy created by the death of Morgan Fenley.

...CHARLES E. LAWTON, New York State representative of the McKay Chain Co. with offices in Williamsville, N. Y.

...JOHN W. HANLON, as sales manager of the Carry-All division of Morrison Steel Products, Inc., Buffalo, N. Y.



...ROBERT W. RICHARDSON, named sales representative of Ethyl Corp. for the Philadelphia, Penna., area.

...SAMUEL F. GREEN, fleet and equipment sales supervisor at Willys-Overland Motors, Inc., Toledo, Ohio has been appointed regional manager for the West Coast, with headquarters at Willys-Overland's Maywood assembly plant near Los Angeles, Calif.

...JOHN A. BORMAN, chief engineer of The Baker-Raulang Co., Cleveland, Ohio.

...FRED H. KROEGER, as sales manager in charge of power brakes and devices for the Marvel-Schebler Products Div. of Borg-Warner Corp.

...HAROLD V. ATNIP, chief draftsman of the Body Design Department of Chrysler Corporation's Engineering Division, has been elected and installed as president of the American Society of Body Engineers. He succeeds HARRY G. GARMAN of the Fisher Body Division of General Motors Corp.

...ERIC W. HALL, coach advertising manager, GMC Truck & Coach Div., Pontiac, Mich.

...D. S. SHIPLEY, branch sales manager, Bowers Battery and Spark Plug Co., Reading Penna.; RICHARD BOWERS, appointed to the sales staff, and E. J. PLANAS, as Philadelphia district manager.

...WILLARD C. SHULL, special assistant to the president, Gould-National Batteries Inc., St. Paul, Minn.

Smaller 'Packages'... Same High Purity LINDE Oxygen and PREST-O-LITE Acetylene

Trade-Mark

Trade-Mark



now in
HANDIER
cylinders for

- Garages
- Small manufacturing plants
- Sheet metal works
- Electrical repair shops
- Heating, plumbing, and air-conditioning contractors

	Style	Capacity cu. ft.	Height in.	Diam. in.	Weight	
					Full lb.	Empty lb.
Oxygen	Q*	80	35	7 1/4	67	60
Acetylene	WQ	60	24 3/4	7 3/4	55	51

*In some areas, Style XL, 70 cu. ft.

ORDER FROM YOUR

Linde
Trade-Mark

DISTRIBUTOR

"Linde" and "Prest-O-Lite" are trade-marks of Union Carbide and Carbon Corporation.

Everyone who works with metals should have an oxy-acetylene welding and cutting outfit. A jobber near you can supply your needs promptly. Write us for his name and address. Linde Air Products Company, a Division of Union Carbide and Carbon Corporation, 30 East 42nd Street, New York 17, New York.

Silencing First!

Here's startling news for the muffler industry! Our engineers have developed a revolutionary muffler with a ribbed outer shell which does an outstanding job of silencing the new high compression engines. The ribs create a dead air space between inner and outer shells. They act as fences which "fence-in" the sound vibrations and keep them from reverberating around the shell.

This muffler, which is now being made for original equipment on several 1952 models by our subsidiary, Oldberg Manufacturing Company, is available to AP dealers. The new design will also be used whenever this type of silencing is required for modern high compression engines. Here is another example of why AP leads the field.

THE AP PARTS CORPORATION
1186 AP Building • TOLEDO 1, OHIO
Manufacturers of MUFFLERS • PIPES • MIRACLE POWER • dgf 123



Mufflers

Why Are Insurance Rates Up?

Although plagued by higher costs like other businesses, capital stock insurance companies have been writing a large part of casualty coverage below or close to the rates prevailing before World War II. At the close of 1951, countrywide average rates for major lines of coverage written by capital stock companies were up an average of only 13 per cent above the prewar—1935-39 average—level.

Here, specifically, is what has happened to rates, according to William Leslie of the National Bureau of Casualty Underwriters.

The big jump in hospital fees over the past decade and the marked rise in the size of verdicts in liability suits during the same period naturally helped to raise the average cost of claims for bodily injuries. Hospital rates in some instances rose as much as 174 per cent. The average verdict for the plaintiff in liability suits in New York State, for example, almost doubled, the increase being 94 per cent; and jury awards in other areas have followed the same upward trend.

The rise in the average cost of property damage claims is explained by a number of factors. The chief of these has been inflation. The cost of automobiles and of repairing them has soared upward. In 1950 the average wholesale value of new passenger cars was 125 per cent above the prewar figure. Automobile repair costs—parts and labor—jumped 134 per cent from 1940 to 1950.

The modern design of cars has also been a factor in higher claims costs for property damage. Before the war a broken fender was just that—a broken fender, and it could be replaced for \$10. But on the latest cars a fender includes a headlight or taillight and in many cases a substantial part of the body, too, and a replacement costs about \$90. Not all car repairs have taken this same percentage leap in price, of course. A front end replacement which cost \$100 in 1940 carries a price tag of \$290 today, an increase of 190 per cent. Certainly the elaborate grill work, curved windshields and other innovations on the latest car models have also made repairs and replacements more costly.

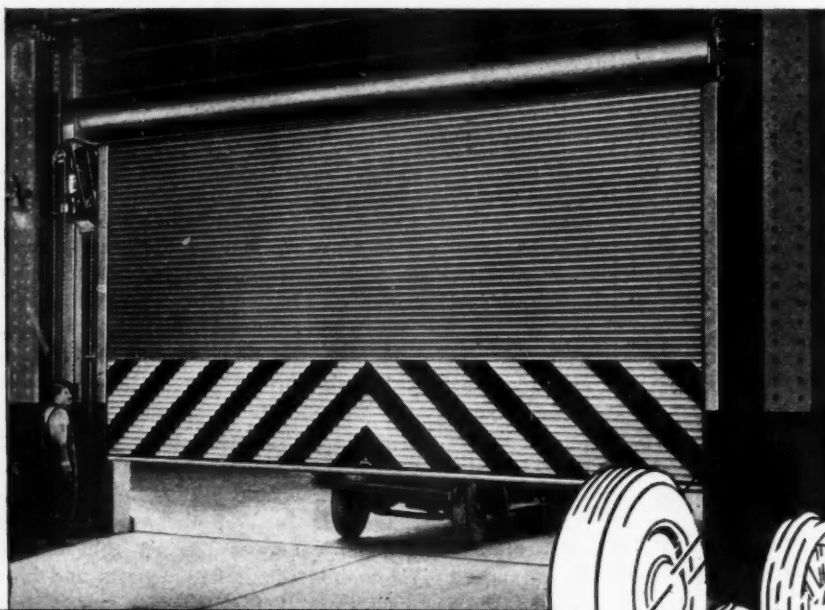
The unfavorable situation resulting from higher claim costs for both bodily injury and property damage has been further aggravated since 1949 by a mounting claim frequency, that is, by a rise in the number of claims per given number of insured cars. Yes, claim frequency both for bodily injury and property damage, which went down during the war, has headed upward again.

With claim frequency mounting and with claim costs still being forced upward by inflationary pressures, which show no signs of abating, the problem of getting and keeping automobile liability rates on an adequate level will continue. Since almost all this coverage is written on a fixed exposure basis, that is, on a per car basis, which does not automatically provide a compensating effect, it is quite likely that loss costs and operating expense ratios will go on rising.

Rates for general liability insurance rose an average of 9 per cent with some coverages in this line priced below and others above the prewar level.

Owners', landlords' and tenants' liability insurance, which protects the insured against liability imposed by law for injury to the person and property of others which arises out of the ownership, maintenance and use of the premises and adjacent ways, bears a premium determined from the use of area and frontage as the exposure base. Since the rate basis is invariable and therefore does not automatically adjust to the effect of inflation, the rates for this kind of coverage rose above the prewar levels because of rising claim costs.

Tomorrow's Buildings To Demand More Attention To Door Efficiency



Like the **WHEEL** . . .

KINNEAR Rolling Doors
are HERE TO STAY!

Like the rolling action of the wheel, the smooth upward operation of Kinnear Rolling Doors involves basic, unchanging principles of engineering efficiency. The door's advantages have been proved in thousands of installations, through more than half a century.

Today the dollar-saving importance of these Kinnear advantages is getting closer attention from building designers everywhere. As building construction, operation and maintenance costs continue to rise, the space, time, labor and construction costs that can be saved with efficient doors are major items in any business operation.

Kinnear's rugged curtain of interlocking metal slats opens straight upward. It coils compactly out of the way above the opening. Floor, wall and even ceiling space remain fully usable at all times. The door clears the opening from jamb to jamb, and from floor to lintel, completely out of traffic's way.

When open, it is safe from damage by wind or vehicles. When closed, it presents an all-metal barrier that assures extra protection against storms, intruders, and fire.

In addition, Kinnear Rolling Doors provide smooth, easy operation under all conditions. They may be controlled manually, mechanically (by chain or crank) or electrically. Motor operated doors can be equipped with any number of remote control switches, for highest convenience. Kinnear Rolling Doors are built of various metals, in any size, for easy installation in old or new buildings. Let us send you complete information.

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Offices and Agents in All Principal Cities

SAVINGWAYS
IN
DOORWAYS

KINNEAR
ROLLING DOORS

Wheel Bearings

Continued from Page 60

proved that we had want ads, and that they came from the city in which the complaint originated—some 300 miles from the plant in which the grease was produced.

On another occasion, noisy wheel bearings were blamed on the lubricant. The grease in the container looked normal and batch records showed excellent. The used grease in the bearings was then dissolved, leaving a residue of several grams of steel shavings. The shavings could not come from wear in the bearings, since all surfaces were in good condition—in fact if all the shavings could have been extracted from behind the cage, the bearing might still have been usable.

Contamination

USED greases removed from bearings are often found to contain foreign matter other than solids. Contamination is known to be introduced from many sources, and may arise from others though we may not always identify the contaminant.

One of the easiest to identify was the case of the awful odor! Wheel bearing grease was leaking all over the brake bands! Some of the used "soupy" grease was drawn out of the hub and sent in. The smell was easily identifiable—a gear lubricant additive recommended for hypoid and other use. Defective seals must have permitted hypoid lubricant to travel along the shaft to the wheel hub where the oil mixed with the grease, making a soft mess which in turn leaked out onto the brake bands. Please notice—the complaint did not catch the defective seals, but only raised loud objection regarding "defective wheel bearing grease."

Mixing Greases

ANOTHER not-too-easy series of complaints dealt with one dealer on one make of car. He was having a considerable amount of trouble. Questioning brought out the fact that all the trouble was on new cars. The same grease, used to re-lubricate old cars, was fine. Why lubricate new cars? Because he felt the factory was using too little grease. The problem was not one of overlubrication, since the same personnel who were handling re-lubrication jobs were having no difficulty; and they claimed to be adding only enough grease to bring factory quantities up to the mechanic's usual amounts of grease. The most likely explanation

(TURN TO PAGE 144, PLEASE)

Mighty muscles to wrestle kegs but not for steering



Horse Power Did The Steering Then... *Why not now!*

Majestic brewery horses, as they nodded their gay plumes and jingled the shining brass-mounted harness, supplied horsepower for steering. The driver merely guided them with easy wrist motions. He had mighty muscles—for wrestling kegs—not for fighting a steering wheel. • The ordinary brewery truck or other truck of today has lost its horsepower for steering. Everything is made easy for the driver except the job he has to do at every corner he turns... when dodging traffic... in parking. He herds the hack by main strength, often parks with wrenching heaves. If the vehicle is very big he has to have mighty muscles, no matter what he's carrying. • And he tires on the job... he slows down, becomes less efficient and gets less done. • Why not have Vickers Hydraulic Power Steering on your trucks? It provides the horsepower for steering so the driver can handle any vehicle with an easy twist of the wrist. He retains his efficiency and gets more done... with greater safety. Get the details on Vickers Hydraulic Power Steering; write for Bulletin M-5100.



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VICKERS hydraulic
POWER STEERING

is Effortless, Positive and Shockless

Wheel Bearings

Continued from Page 142

seemed to be—*mixing* of grease types.

At the present time, greases used on wheel bearings are made in the main from sodium, calcium, lithium, and barium soaps. Mixtures of certain soaps may be formulated to make good greases, but mixtures made at random may produce disastrous results. Thus a soda soap grease run on the ASTM

wheelbearing grease tester showed a good PASS. As little as 5 per cent of cup grease mixed in changed this to a distinct FAIL. Similarly, a lithium grease which showed PASS changed to FAIL when only 5 per cent soda soap wheelbearing grease (also showing PASS) was mixed in.

In the case of the new cars just mentioned, the manufacturer was using calcium-base cup grease; the added grease was made from soda soap, which showed a good PASS. The mixture of these could easily have been fluid, causing it to run all over the brake bands.

Contamination from Cleaning

ALSO related to cleaning are two other possible contaminants. Most bearings are cleaned with solvent or kerosene, which is in turn blown out. However, a mechanic may clean the bearings, blow them dry, and with hands still dripping with solvent, carry the "dry" bearings back to the bench, thereupon wetting them again. A very small percentage of solvent will ruin the structure of a grease, and therefore its performance.

Some cleaning is done with aqueous solutions, followed by a water rinse, then blowing with air. Some water may be left due to insufficient blowing—or, for that matter, due to wet air coming from the hose line. If all the water is not removed after such cleaning, the amount left may do its share of damage—by contamination or by rusting. From the contamination viewpoint, one per cent of water changes the ASTM wheel bearing test of a grease from PASS to FAIL. One per cent of the amount of grease in a wheel bearing assembly would be only a few large drops.

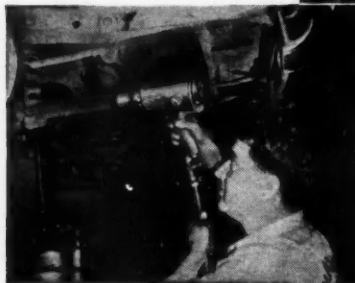
Water cannot be kept away from wheel bearings. Antifriction bearings have a good deal of free space. As temperatures go up, air expands and the density in this space is light; as temperatures drop, air is drawn in. If the air is moist, due to humidity or to splashing, water will be brought into the bearing space. We have all driven through puddles so deep that the brakes became wet, even though they are reputed to be "sealed." If the water is as high as the spindle, can we not also expect to have water on the wheel bearings? This will mix with the grease; and the mixture will act differently than it would in the absence of water. In this connection, it is of interest that more complaints arise in humid areas than in the drier parts of the country.

The other problem associated with the presence of water is rusting. The clean surfaces of bearings from which all old grease has been removed, are quite susceptible to rusting. Aqueous cleaning is particularly hazardous from this viewpoint. However, the air coming from the air hose is often wet, so that water is deposited on cleaned surfaces even after solvent cleaning. If such bearings are left around for any length of time without being greased, they may start to rust. And once the surfaces are attacked, incipient failure has set in. If clean bearings are handled, moisture and perspiration from the hands may start such rusting. Although we have never actually traced service complaints to these factors,

(TURN TO PAGE 146, PLEASE)

Here the angle head is needed

Short overall length counts, too



detachable angle heads — Controllable Power

The only *complete* line of Air Impact Wrenches with controllable power and detachable angle heads: CP-730, capacity to 1/2" bolt size; CP-750, to 5/8" bolt size; CP-770, to 1" bolt size. Their controllable power makes it easy to run nuts to any predetermined tightness.

For heavier jobs, the CP-365, capacity to 1 1/4" bolt size, is available in straight and angle head models.

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White-Freightliner reduces C.O.E. tractor weight 2100 lbs. with ALUMINUM

Tractor-wise designers at Freightliner Corporation saw your pressing need for *maximum weight saving plus maximum payload space*. The result: The White-Freightliner C. O. E. (cab over engine) Tractor. This design permits the use of two 24 ft. trailers within the 60 ft. overall length limit. Weight of this model was reduced 2100 lbs. by using Alcoa Aluminum.

The time-proved acceptance of aluminum is well shown in the White-Freightliner. In 1940, Freightliner used aluminum in 31 parts of their tractor. Today, aluminum is used in over 79 . . . very few cab and chassis parts remain in any other material. This big increase in aluminum's use was dictated by three profitable motives: lower *maintenance* because aluminum resists corrosion, simplifies repairs . . . *more payload* because aluminum cuts dead weight . . . *longer equipment life* because aluminum lasts.



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When you operate lightweight equipment of Alcoa Aluminum, you realize more than ever, "Extra payload is the payoff!"

Send for FREE trailer booklet

Military needs limit the aluminum we can supply. But this 36-page "Payload Proof" book will help your long-range planning for more profitable equipment. Write:

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1876C Gulf Bldg. • Pittsburgh 19, Pa.



ALCOA



First in Aluminum
The Metal that LASTS

Wheel Bearings

Continued from page 144

good judgment would indicate the desirability of re-lubricating bearings immediately after cleaning, working the grease carefully around each ball or roller, so that all metal is coated with grease. And good judgment backed by experience shows the desirability of using a rust-preventing rather than a water-resistant grease. There is no accepted laboratory measure of rust

resistance in a grease; but it is known that soda soap greases and many lithium soap greases have been proved in service to be rust resistant; whereas, highly water-resistant greases should be suspect.

Mechanical Conditions

THE subject of cleaning bearings brings up another group of problems that might be called "Bearings That Were Wrecks." Here we might refer to bearings that are mechanically not in suitable condition before installation. One of the most common

malpractices is spinning a bearing with air while drying. The process of "spinning" a bearing hastens drying; but unrealized, we are rotating without any lubricant, a mechanism in which both sliding friction and rolling friction are in action. The polished surfaces being dry, scratching may easily take place, leading to a grease complaint at some future date.

Another often-unrecognized problem is "brinnelled" bearings. It is known that so-called "false brinnelling" occurs occasionally while vehicles are transported from factory to dealer. If this is not recognized, a vehicle may be operated to failure of the bearing, and a consequent grease complaint.

Mention has been made above of possible damage to bearings during removal. Bearings are hammered or pulled out, frequently without respect for such a precision assembly; they may drop on the floor, they may be cracked, chipped, dented, or otherwise injured. They should then be cleaned and inspected before re-installation in order that these or other undesirable conditions such as brinnelling, etching, or rusting, may be observed. Reassembly with such defective parts is equivalent to asking for a complaint—a grease complaint later. It has been our personal observation that the usual wheel bearing packing job does not include such inspection. Chances for failure are obvious. Note: Wheel balancing and brake inspection often require removal of the wheel with attendant possibility of harming bearings or seals.

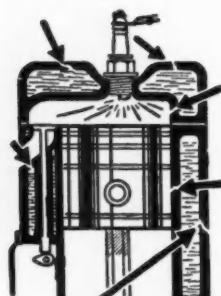
Seals

WHEN wheel bearings are removed, seals in many cases become impaired. Seals, like the bearings themselves, should be checked, and if badly worn or damaged should also be re-

(TURN TO PAGE 148, PLEASE)

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The AMAZING CHEMICAL containing SEALIUM
(an exclusive product of LUSCO, Inc.)

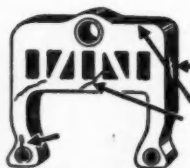


Repairs all kinds of cracks in motor heads and blocks including **CRACKS DIRECTLY INTO THE COMBUSTION CHAMBER**
(available in 'HEAVY DUTY' \$3.00 per pint list)

Repairs radiator leaks just as effectively or more so and just as permanently as a solder job. (available in 8-oz. cans \$1.00 list)

Works perfectly in water, alcohol and glycol. Is an excellent cleaner as well as a phenomenal sealer.

Makes possible amazing leak repairs in high pressure industrial boilers as well as low pressure steam heating boilers. (available in one gal. containers 'Heavy Duty' or special Heavy Duty)



LUSCO Seal-Wel CUBES (18 years in the market)
The World's best low priced radiator seal at 30¢ per CUBE list. May be sold with "GUARANTEED 90 DAY SERVICE." The conditioner and leak-proofing material that should be included with the liquid in every motor circulating system. Makes a motor run better. Insures anti-freeze installations.



The LAZY MAN'S POLISH

LUSCO-vize
The World's best standard Polish for AUTOS — FURNITURE — WINDOWS (and all smooth finishes) "CLEANS TO THE ORIGINAL FINISH"

SIL-vize
The SUPER POLISH containing 6% SILICONE (water-emulsified) Cleans and 'Siliconizes' car finishes for one year lasting qualities

These are our claims for The LAZY MAN'S POLISH, either LUSCO-vize or SIL-vize. It is the fastest and easiest product to use and gives super results. It may be applied in brilliant sunlight, over wet surfaces, over the entire surface before wiping off, does not stick, streak, or fingermark. Works perfectly on Duco, Paint, Enamel, Synthetics, Varnish and Chrome.

FILL IN COUPON BELOW

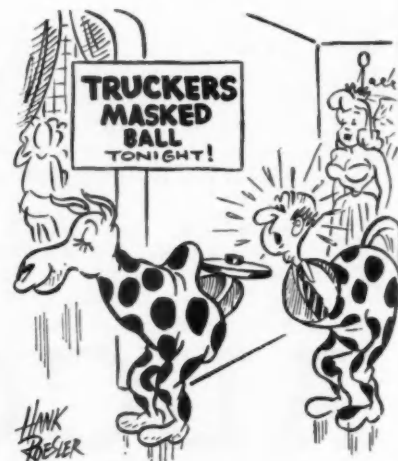


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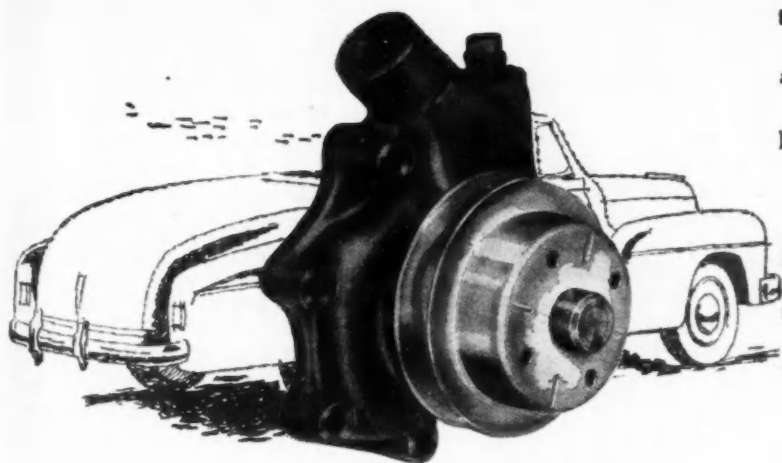
Enclosed is my letter head (or bill head). Please tell me how I can secure three cans FREE for trial. I am interested in:

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☐ The LAZY MAN'S POLISH
☐ Please RUSH me C.O.D. Parcel Post prepaid three boxes LUSCO Seal-Wel CUBES\$6.48

Name
Position (please print)



"Ye Gods! A fifth wheel!"



PUMPS for the cooling systems of cars, trucks, buses and tractors or pumps for grinding and cutting machines are engineered and precision built by Thompson.

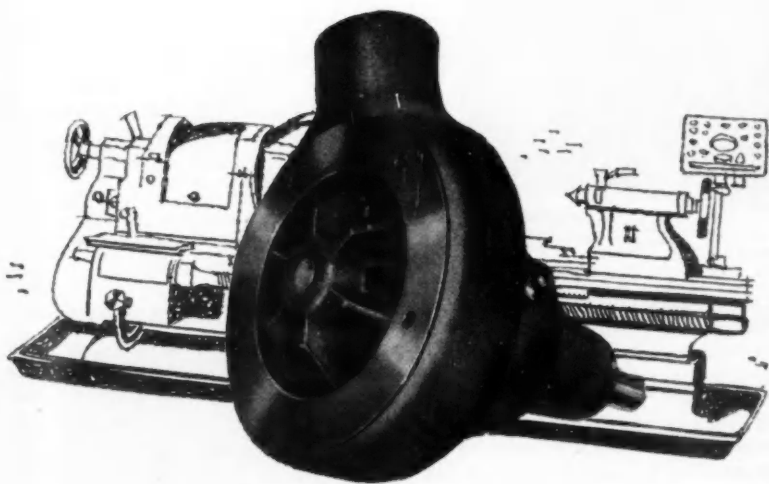
Thompson engineering and Thompson production skills have been sharpened by the production of automotive and aircraft parts for over 50 years.

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For pump performance you can take for granted: *count on* Thompson

This means that every Thompson pump assures maximum performance and dependability.

If you need pumps to keep your product cooled or pumps to cool your engines, write or phone Special Products Division, Thompson Products, Inc., 2196 Clarkwood Rd., Cleveland 3, Ohio. You'll soon learn what leading manufacturers have known for 50 years —you can count on Thompson.



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CAST IRON PISTONS • VALVE RETAINER CAPS AND LOCKS

Wheel Bearings

Continued from Page 146

placed. Grease seals are not designed to last the life of the car. It must be realized that seals supplied by the manufacturer are for reasons of economy the simplest closures that may be expected to work. One group of complaints, all centering about one make of car, seemed to point to exceptionally inadequate sealing which allowed almost unlimited access of dirt and mois-

ture. At least the complaints ceased when the seals were changed, and only then.

Wheel bearing lubrication by softer greases would be practical if seals were better. And in most instances "leakage" complaints would disappear if seals were kept in better shape. In one case, after some 25,000 miles of operation, grease leakage was observed. The car was brought in for bearing pack and seal change. After some 250 miles, grease leakage was again observed, on the same wheel. A return to the same service man showed that no seals had

been replaced. The wheel was pulled, one seal replaced, the wheel re-assembled. The grease that "leaked" did not leak with a new seal. When new bearings are being installed new seals should be used and when bearings are serviced, seals should always be inspected.

No seals can be expected to compensate for overfilling. When a wheel bearing assembly is filled normally, a considerable space is left. In service temperature changes are inevitable; but the free space permits air to be pushed out, then drawn in. If the space is full of grease, the lubricant is pushed into the roller paths to churn, and with a temperature rise, to be pushed out of the bearings, through the seals.

Adjustment

ADJUSTMENT of wheel bearings must receive some consideration. Bearings that are slightly cocked, cannot track properly. Overheating and ultimate failure (blamed on grease) are then inevitable. Directions for installing bearings all emphasize this point. Some instructions call for over-tightening as an aid to proper seating of the bearings. The nut is then loosened, and readjusted properly. We have, however, seen photographs of ball bearings showing two tracks. And as proof of unsuitable grease we have received ruined bearings which showed definite mistracking. We must thus conclude that this factor is occasionally overlooked.

The actual tightness or looseness of adjustment of a bearing is known to be a critical factor. We have seen bearings which were probably not seated when the cotter pin was inserted. Perhaps in use the bearing soon shifted into proper position, making the adjustment too loose. Such bearings seem to become even more loose with time, and are ultimately likely to cause trouble.

END

Please Resume Reading Page 62

Highway's New Home



Completion of the transfer of the Highway Trailer Co. tanker engineering and manufacturing division from Cincinnati, Ohio, to Edgerton, Wis., has been announced. The move placed all tank truck operations under one roof. The aerial view shows the portion (lower left section of the building) which has been added to accommodate the Cincinnati operations.

COMMERCIAL CAR JOURNAL, March, 1952

They don't believe their eyes!

PROGRESSIVE OVERHAUL SHOPS USE INSPECTION with MAGNAFLUX* to make invisible cracks visible—to spot every defective part during overhaul



Magnaflux-Magnaglo* indication of otherwise non-visible crack very near to final failure.

Get Longer, Safer Miles from Engines Rebuilt in Licensed MAGNAFLUX Overhaul Shops

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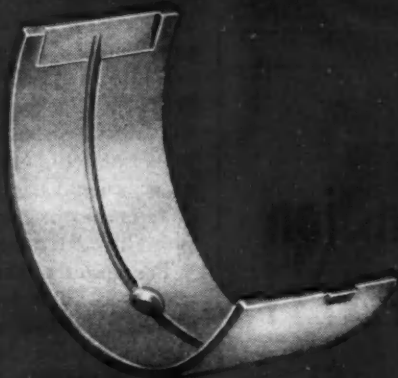
MAGNAFLUX CORPORATION
5908 Northwest Highway, Chicago 31, Illinois
New York 18 • Cleveland 15 • Detroit 11 • Dallas 9 • Los Angeles 58
Export Distributor: Curtis Wright Corp. In Canada: Williams & Wilson, Ltd.

The sharpest-eyed, most careful inspection can't reveal cracks and defects too small to be seen. Yet these cracks—in crankshafts, connecting rods, gears, spindles or other vital parts—may fail soon after overhaul. And you'll be out the cost of the overhaul and likely the destruction of other parts as well! . . . Inspection with Magnaflux instantly spots every crack and defect.

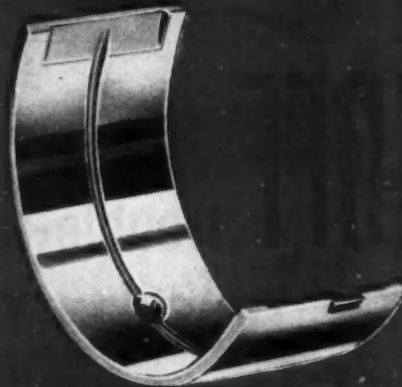
Insist upon the safety and savings of Magnaflux with every overhaul—provided by 107 licensed Magnaflux Overhaul Shops. Write us for location and name of the one nearest you.

Copper-Lead Bearings

AT THEIR BEST!



FEDERAL-MOGUL *Ca*
COPPER-LEAD BEARING



FEDERAL-MOGUL *Cp*
COPPER-LEAD BEARING

Mr. Fleet Owner — ONE OF THESE TWO COPPER-LEAD BEARINGS WILL GIVE YOU TOP MILEAGE AND PERFORMANCE

Ca Federal-Mogul's copper-lead bearings for installation where align boring or resizing is necessary. They do not require surface-hardened crankshafts. Precision standard sizes, undersizes and semi-finish.

Cp Federal-Mogul's copper-lead bearings for *precision* installations. Overplated to assist in break-in — can *not* be align bored or resized. Used with commercially hardened crankshafts. Furnished only in precision sizes.



WHATEVER YOUR SERVICE BEARING NEEDS . . . FEDERAL-MOGUL HAS THE ANSWER FOR YOU!

Both of these copper-lead bearings were developed by Federal-Mogul for specific service needs—with heavy-duty fleet operation in mind. Use the one that meets your conditions . . . and get ready to write up new records in engine mileage through better bearing performance!



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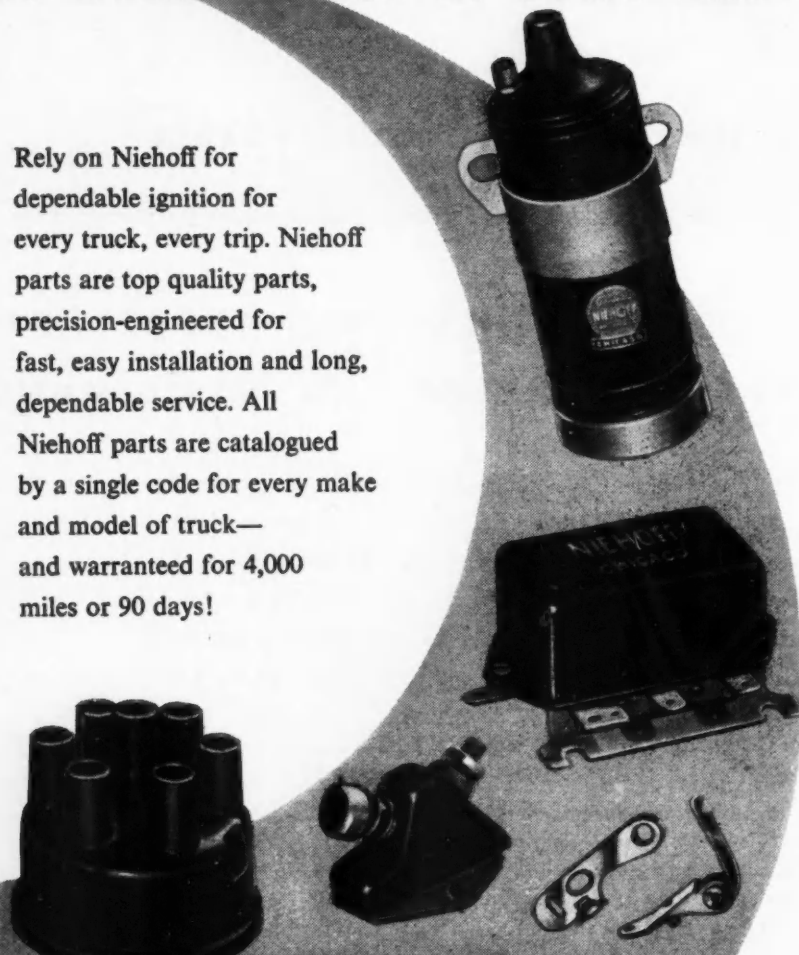
Division of Federal-Mogul Corporation

Florida Tanker Carries Live Game Fish

Trailers equipped with circulating and aerating system keep tropical fish specimens healthy during transfer to aquarium

NIEHOFF trouble-free ignition FOR EVERY TRUCK IN YOUR FLEET!

Rely on Niehoff for dependable ignition for every truck, every trip. Niehoff parts are top quality parts, precision-engineered for fast, easy installation and long, dependable service. All Niehoff parts are catalogued by a single code for every make and model of truck—and warranted for 4,000 miles or 90 days!



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NIEHOFF Warranted Ignition

VTRUCK drivers in the Mid-West and Eastern states have every reason to envy Paul Porter, driver for the Marine Studios, Marineland, Fla.

While they're busy bucking snow-drifts, icy pavements and snarled-up city traffic, Porter is cruising the sunlit, palm-lined highways of Florida, with an occasional trip to Key West thrown in to break the monotony. He drives a specially constructed aquaritrailer.

The larger of the two Marine Studio trailers is 20 ft long, and is used for transporting live sharks, sawfish, porpoise and other deep-sea giants to the tanks of the world's only oceanarium.

The smaller truck, approximately 14 ft long, has a built-in circulating and aerating system that provides the proper amount of oxygen, to insure the safe delivery of the brilliantly colored tropical specimens that are brought from the Florida Keys. Specialized techniques employed by the driver are responsible for the surprisingly small loss of specimens on the 350-mile trip of the aquarium-on-wheels.

When things grow dull, Paul goes out with the Studio's fishing crew to help catch the speedy porpoise and hard fighting sharks. Or he may travel with the collecting crew; fishing the inland waterways, rivers and canals for smaller specimens.

The hardest part of Porter's job is when he has to assist in raising one of the freshly captured deep-sea giants (some weighing 400 lb) from the fishing boat to the trailer tank. The trailer is then rushed to the oceanarium, where a full crew stands by to aid in transferring the specimen to the reception tank.

The trailer tank is detachable, and is hoisted by means of block and tackle, some 15 ft in the air. It is then guided by the Studio diver, Frank McCallum, to the reception tank.

Anything can happen . . . and frequently does. For instance. While locking the chain-hoist to the truck tank, Porter grew careless and lowered his arm into the tank.

They were transferring a lemon shark, one of the most vicious of the species. The double row of serrated teeth that fill the maw of the lemon

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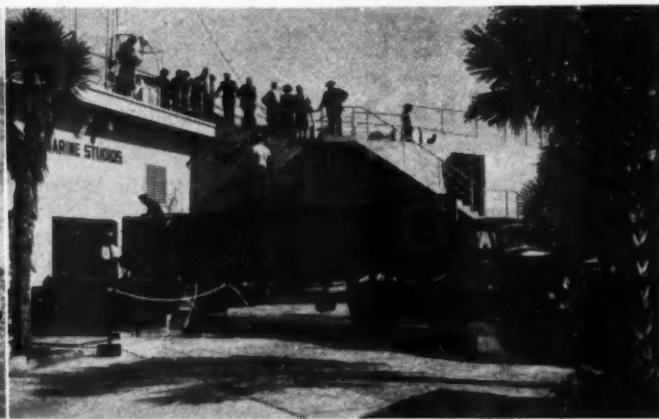
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The big Mack unit shown above is used to transport smaller specimens under conditions made similar to the ocean. Driver and studio crew standing by to transfer trailer tank to the reception tank. On a catwalk directly over the reception door, a diver stands ready to rescue any person who may fall in.

shark, are capable of taking a man's arm off as neatly as a surgeon's scalpel. Porter came out of this encounter minus a shirt sleeve and a little self-assurance.

Porter was asked what his gripes were . . . if any. It seems that the one thing that annoys him most are the tourists who drive alongside the truck to learn what he is carrying in the aquarium tank. According to Porter, they do everything but climb over the side of the tank which, in case he has a shark aboard, could prove non-habit forming.

Trucks Carry Goodwill

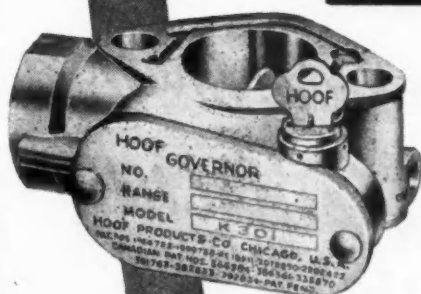


Boosting others is one way of getting ahead yourself, reasons Julius Scheffler, head of a midwest trucking concern whose fleet of semi-trailers are virtually billboards-on-wheels for Wisconsin farmers and industries. Scheffler's 65 huge trucks roll between Chicago and several Wisconsin cities. On many of the vehicles are huge, colorfully painted advertisements. Some, in big letters, hail Wisconsin as "America's Dairyland, Famous for the 'She's,' the 'He's,' the Peas and the Cheese." Another boasts of Sheboygan's famous Bratwurst sausage.

These rolling billboards have gained quick recognition and priceless goodwill wherever they are seen, and the Scheffler units are in constant demand for parades in Wisconsin cities. Since he started advertising other's products instead of conventionally boosting his own company, Scheffler has seen business increase by thirty per cent.

...always good
operating practice

HOOF GOVERNORS

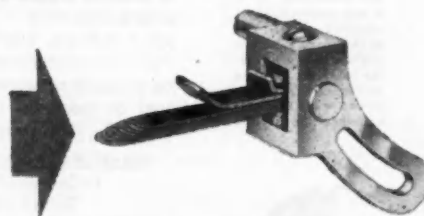


...NOW A "MUST" WHEN
CONSERVATION OF
EQUIPMENT IS SO VITAL!

As conclusively proven by hundreds of Fleet Records, Hoof Governors s-t-r-e-t-c-h vehicle life, reduce gas and oil consumption, increase tire mileage and materially expand the interval between overhauls!

Now, more than ever, the "Hoof Story" deserves your full attention. Write us for full details today!

No other Governor has Hoof's patented Cantilever Spring that means more accurate speed control, simplified construction and longer life!



HOOF PRODUCTS CO. 6543 So. Laramie Ave., Chicago 38, Ill.

FLEET NOTES



Neptune Storage, New Rochelle, N. Y., recently awarded safety certificates and pins to 29 drivers whose no-accident records ranged from one to 15 years.

John Labatt Ltd., London, Ontario, Canada, has appointed R. L. Morris as director of transport. Mr. Morris will be in charge of the company's transportation and traffic operations both by rail and truck.

Branch Motor Express, New York, has awarded safe driving certificates and pins to 34 of their drivers who have driven from one to nine years without a reportable accident.

Shippers Dispatch Inc., South Bend, Ind., has formally opened a new terminal at Laskey and Tractor Roads, Toledo,

Ohio. The new facilities are under the general management of Richard C. Cramer who is eastern division manager of the firm. He is assisted in sales work by Fred Catlin. Roy Word is superintendent of operations.

Pacific Intermountain Express, Oakland, Calif., has announced that Earl J. Brooks has been promoted to assistant traffic manager. PIE also has placed Bruce Wray as branch manager trainee.

National Automobile Transporters Assn. reports that two Michigan automobile transport firms have distributed more than \$18,000 in cash bonuses for safety records ranging up to 18 years without a chargeable accident.

Fleet Carriers Corp. of Pontiac, Mich., presented 44 drivers with awards and bonuses. At Dearborn, Mich., the annual safe driving awards of cash and gold watches were made by the E. & L. Transport Co. Ernest F. Broecker, a driver with 18 accident-free years, was of this group.

Haeckel's Express, Hamilton, Ohio, celebrated 75 years of intercity trucking by opening a new terminal and general office building. The building has a total area over 30,000 sq ft, has a 24-bay dock, and in the maintenance department, a body shop equipped with hydraulic hoists that can lift loaded trailers, a motor and chassis repair shop, machine shop, and general maintenance area for all types of heavy truck equipment.



*What You've Always Needed...
A NON-ALKALINE
Steam Gun Cleaner!*

TRY OUT MAGNUS 72

Trying out Magnus 72 is easy... and it will quickly prove its unusual values in your shop. Just order a 15-gallon drum. Use it in your steam gun or vapor cleaner for 30 days, according to our directions. If it is not completely satisfactory at the end of that period, return the unused portion of the contents and we will credit your account with the full amount of the invoice.

Ordinary steam cleaning compounds, based on alkaline salts, were always partly unsatisfactory. They tended to clog the cleaning equipment. They conducted electricity, making the use of this cleaning method hazardous around electrical connections. They attacked paint and other surface coatings. Now all these difficulties are ended with

MAGNUS 72

a unique steam cleaning material that is non-alkaline... non-conducting... non-corrosive... non-fuming. It can be used indoors, and is completely safe for operators. Magnus 72 is an exceptionally fast and thorough cleaner, supplied as a liquid concentrate... easy to mix and proportion. Neutral in reaction, it will not attack painted surfaces. TRY IT OUT... It's Easy!

MAGNUS CHEMICAL CO. • 38 South Ave., Garwood, N. J.
In Canada — Magnus Chemicals, Ltd., Montreal.
Service representatives in principal cities.



MAGNUS
CLEANERS • EQUIPMENT • METHODS

Budd Wheel Distributors provide the same service described in this advertisement

AKRON—Motor Rim Manufacturers Co.
ALBANY—Wheels, Incorporated
ALBUQUERQUE—Wheels & Brakes, Inc.
ATLANTA—Harris Automotive Service, Inc.
BALTIMORE—R. W. Norris & Sons, Inc.
BIRMINGHAM—Wheel, Rim & Parts Co.
BOSTON—New England Wheel & Rim Co.
BUFFALO—Frey, the Wheelman, Inc.
CHARLOTTE—Carolina Rim & Wheel Co.
CHICAGO—Stone Wheel, Inc.
CINCINNATI—Rim & Wheel Service, Inc.
CLEVELAND—Motor Rim Manufacturers Co.
COLUMBUS—Hayes Wheel & Spring Service
DALLAS—Southwest Wheel, Inc.
DAVENPORT—Stone Wheel, Inc.
DAYTON—Rim & Wheel Service, Inc.
DENVER—Quinn & McGill Motor Supply Co.
DES MOINES—Des Moines Wheel & Rim Co.
DETROIT—H. & H. Wheel Service, Inc.
EVANSVILLE—Auto Wheel & Rim Service Co., Inc.
FARGO—Wheel Service Company
FORT WAYNE—Wheel & Rim Sales Co.
GRAND RAPIDS—Rim & Wheel Service Co.
HARRISBURG—Standard Rim & Wheel Co.
HARTFORD—Connecticut Wheel & Rim Co.
HOUSTON—Southwest Wheel & Equipment
INDIANAPOLIS—Indiana Wheel & Rim Co.
JACKSONVILLE—Southeast Wheel & Rim Co.
KANSAS CITY—Borbein, Young & Co.
KNOXVILLE—Harris Automotive Service, Inc.
LOS ANGELES—Wheel Industries, Inc.
LOUISVILLE—Auto Wheel & Rim Service
MEMPHIS—Beller Wheel, Brake & Supply Co.
MILWAUKEE—Stone Manufacturing Co.
MOLINE—Mutual Wheel Co.
NASHVILLE—Beller Wheel, Brake & Supply Co.
NEWARK—Automotive Safety Inc.
NEW HAVEN—Connecticut Wheel & Rim Co.
NEW ORLEANS—Southern Wheel & Rim Co.
NEW YORK—Wheels, Incorporated
OKLAHOMA CITY—Southwest Wheel, Inc.
OMAHA—Morgan Wheel & Equipment Co., Inc.
PEORIA—Peoria Wheel & Rim Co.
PHILADELPHIA—Thomas Wheel & Rim Co., Inc.
PITTSBURGH—Wheel & Rim Sales Co.
PORTLAND—Six Robblees', Inc.
PROVIDENCE—New England Wheel & Rim Company
RALEIGH—Carolina Rim & Wheel Co.
RICHMOND—Dixie Wheel Co., Inc.
ROCHESTER—Frey, the Wheelman, Inc.
SALT LAKE CITY—Henderson Rim & Wheel Service
SAN ANTONIO—Southwest Wheel & Equipment
SAN FRANCISCO—Wheel Industries, Inc.
SEATTLE—Six Robblees', Inc.
SOUTH BEND—Wire & Disc Wheel Sales & Service
SPOKANE—Bearing & Rim Supply Co.
SPRINGFIELD, ILL.—Illinois Wheel & Brake Co.
SPRINGFIELD, MO.—Borbein, Young & Co.
ST. LOUIS—Borbein, Young & Co.
ST. PAUL—Wheel Service Co.
SYRACUSE—Colbourn Wheel & Rim Service, Inc.
TACOMA—Six Robblees', Inc.
TOLEDO—Wheel & Rim Sales Co.
WICHITA—Borbein, Young & Co.
WINSTON-SALEM—United Automotive Service

EXPORT

CLEVELAND—C. O. Brandes, Inc.

CANADA

CALGARY—Fisk Tire Service Ltd.
EDMONTON—Alberta Wheel Distributors, Ltd.
MONTREAL—Auto Wheels & Supplies, Ltd.
TORONTO—Wheel & Rim Co. of Canada, Ltd.
VANCOUVER—Wheels & Equipment, Ltd.
WINNIPEG—Ft. Garry Tire Service Ltd.



• Sobering Up The Dump Trucks

"With their own weight of eight tons, and an eight ton load of limestone, these dump trucks were so hard to steer they were weaving all over the road." That's what Ted Brafman writes. He's a salesman for Stone Wheel, Inc., Davenport distributors for Budd Wheels.

"Besides," Ted added, "they were getting a lot of side-wall cracks." The victims of all this trouble were the Linwood Stone Products Co., of Buffalo, Iowa.

All this was stopped in a hurry by changing from the 20 x 6.00 wheels on which their 10.00-20 tires were mounted, to 20 x 7.50 Budd Wheels. No change at all in tire size.

Just shows what can happen when an expert who knows the right answer is equipped to provide the right answer, as he always is with Budd Wheels—the only complete line with advance, tapered bead seat rims. All Budd Wheel distributors—the one near you is listed at the left—are in a position to render this expert service. Ask your distributor to check your fleet . . . doesn't cost a cent.

The Budd Company, Detroit 14.



GENUINE

Budd

COLD TAPERED DISC

WHEEL

*Specify Budd Wheels and
Standardize on them*

National Council Meeting

Continued from Page 74

by which highway users are fleeced of the benefits of the tax money they pay is through the diversion of highway user taxes for other purposes. This practice which started in the twenty's in a small way, reached an all-time high in 1950 when \$217 million dollars were diverted to non-highway purposes. The total for the twenty-year span ending 1950 has risen

to almost three billion dollars. The worst offender in the country is New York State, which over the past twenty years, has diverted almost one billion dollars of highway user taxes for other purposes, and today New York State is faced with a serious highway problem. Its officials talk about the need for spending more money for highways, but they do nothing to stop diversion. Highway user tax money diverted for

other purposes is lost to highway users forever. Worse than that, they are not only without the roads which these diverted funds would have built, but they are confronted with new and higher taxes to make up for the diverted funds. In New York State this took the form of the iniquitous ton-mile tax.

Another device by which highway users get poor service from the taxes they pay is the process of dispersion—the scattering of highway funds on roads that are unimportant from the standpoint of general traffic. It is a wasteful practice which deprives motor vehicle operators of their proper road benefits. It is brought about by political pressures for state-wide distribution of available revenues rather than by concentrating them where they are needed to build roads to carry the traffic.

In 1930, highway users were paying 37 per cent of tax responsibility for highways and streets as against 56 per cent by the general taxpayers through the local governments. In 1950, highway users were paying 62 per cent of the total, whereas local governments contributed only 27 per cent. What is more important than the percentage figures is the fact that local governments contributed almost a quarter of a billion dollars less in 1950 than they did in 1930.

If this trend continues, then the objective of some groups to place all street and highway expenses on highway users will be accomplished.

As a result of diversion and the scattering of highway user taxes all over the states, there is a condition of

(TURN TO PAGE 157, PLEASE)

ACF-Brill Dieselizes



ACF-Brill's new diesel-powered bus, the IC-41 AD, to be added to its line of gasoline and LPG powered coaches. The newly designed bus is an adaptation of the gasoline powered IC-41A. It will be powered by a 6-cyl., 200 hp. NHHB-600 Cummins horizontal type engine located underneath the floor. With a capacity for 41 seated passengers, the vehicle will be equipped with two-passenger reclining type seats with foam rubber optional. It will be completely air conditioned and contain the latest in safety devices.

TIRE HEAT PROBLEM?

Insure Airtight Tire Valves

USE...

HI-TEMP Heat Resisting
VALVE INSIDES AND CAPS
Developed by **DILL**

No. 100-AH
Valve inside with special heat-resisting rubber in cup and on barrel.



No. 632
Dome-type cap with swivel gasket of special heat-resisting rubber.



No. 631
Hexagon-type cap with lead gasket mounted over brass sleeve.

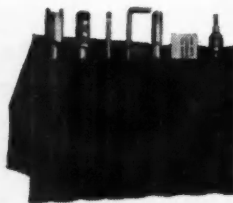


Stop costly road delays caused by tire trouble. Under abnormal hot tire temperatures, even up to 300°F and more, Dill HI-TEMP valve insides and caps keep tire valves airtight. High temperatures will not injure the special Dill heat-resisting air seal. Dill HI-TEMPS are helping fleet owners, everywhere, to maintain schedules and save tire wear. Be sure to get this money-saving equipment, today, from your wholesaler, tire or oil company.

THE DILL MANUFACTURING COMPANY
700 East 82nd St., Cleveland 3, Ohio

HANDY SERVICE TOOLS FOR TRUCK AND BUS TIRES

This handy kit of long-handled tools will save time for your tire serviceman. Each tool is specially designed (approx. 8½" long) to reach inner dual tires for removing and replacing valve insides and making necessary repairs on valve stems. The complete set comes in a leather pouch with snap button lock, and fits handily in pants, coat or jacket pocket.



No. 5200 TOOL SET in Handy Leather Pouch Includes These Tools
No. 5201 Valve Inside Insertor and Extractor
No. 5202 Valve Cap Tool
No. 5203 Valve Inside "Easy-Out"
No. 5204 Valve Stem Refacer
No. 5205 Valve Stem Seat Cleaner
No. 5206 Valve Stem Rethreader

ORDER from your Wholesaler, Tire or Oil Company

DILL

Standard of the Tire Industry

TIRE VALVES AND ACCESSORIES

Council Meeting

Continued from Page 154

congestion of traffic which is unbearable in some localities. On roads outside of cities and governmental reservations, 12 per cent of the rural highway mileage is carrying 86 per cent of the traffic. Yet we find that a comparatively small proportion of highway user taxes is spent on these highways.

Spiking Ton-Mile Taxes

DURING one of the discussion periods in which it was requested that individual comments not be attributed to the speakers, some very interesting data was revealed concerning the disadvantages of ton-mile taxes. Said one fleetman: "Our own administrative cost in collecting ton-mile taxes varies, of course, in relation to the number of vehicles involved. In Wisconsin it costs \$5.10 per truck; in Oregon, where we have fewer trucks it costs \$45.00 per truck." Others present commented on similar figures and cited the extraordinary waste of the ton-mile tax within the fleet organization as well as within the state tax bureaus.

Another speaker urged that when ton-mile taxes appear inevitable, at least they should be earmarked for highway funds. In amplifying this remark, the speaker pointed out that there were two major groups in favor of ton-mile taxes: 1. the anti-truck, primarily railroad interests, and 2. "the spend it boys" at the state capitals who are looking for increased general funds from any source. It was pointed out that the railroad interest could not legitimately oppose such ear-marking of the funds and that this weapon would completely stifle interests of the "spend it boys".

Project Adequate Roads

A SPOTLIGHT on the highway problem was focused by Arthur C. Butler, director of the National Highway Users Conference, discussing PAR—Project Adequate Roads. The presentation was similar to that made before the annual convention of the American Trucking Assns. and reported fully in COMMERCIAL CAR JOURNAL (December, page 64). But Mr. Butler reported, that the project had now been presented to interested highway user groups throughout the country and was meeting with universal acceptance. Basically the program tackles the highway problem through the use of "Sufficient Ratings" and is designed as a specific means of imple-

menting the intensive drive to get the nation out of the highway muddle.

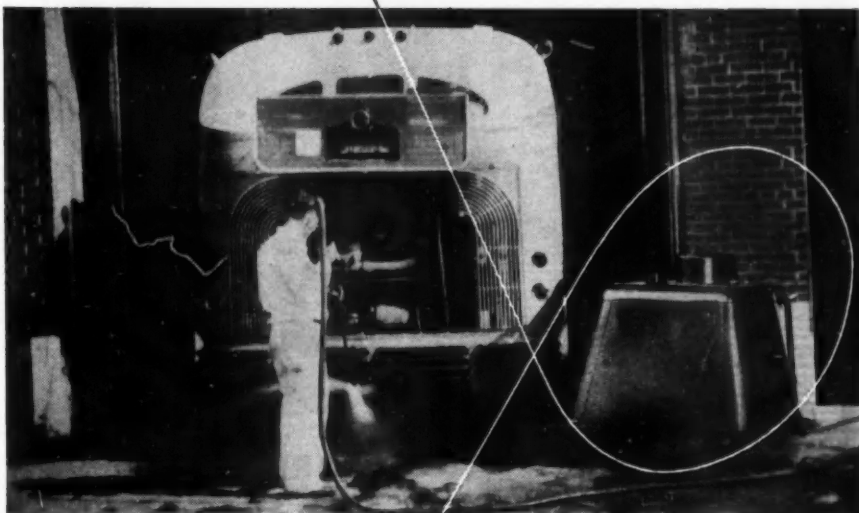
The Equipment Problem

DISCUSSING the equipment problem Mr. Cochran of Defense Transportation Administration, provided the following figures: "Of the vehicles presently in operation, one and one quarter million, or approximately 13.7 per cent, are now estimated to be 14 or more years old, and another one and one-half million, or 17.9 per cent are estimated to be ten years or over in age. Stated other-

wise, approximately one-third of the vehicles have been in service for ten years or more. Based on the best available estimates, approximately 600,000 vehicles were scrapped in 1950 because of accidents, obsolescence and other causes, and it is estimated that this figure was approximately 720,000 in 1951 . . . probably will reach the 800,000 mark in 1952. . . . You may be called upon during this critical period to do with less than is ordinarily needed to maintain your operations," he warned. "It is well for you to con-

(TURN TO NEXT PAGE, PLEASE)

- reduce shop time . . .
- cut maintenance costs . . .
- add to your profits . . .



with
Hypressure **Jenny** steam cleaner

Figures from hundreds of fleet maintenance shops show that when equipment is cleaned with Hypressure Jenny *before* repairs or servicing, mechanics can do their job in just about half the time. With Hypressure Jenny you'll profit not only in labor saved in removing grease and dirt from motors, chassis, parts, etc., but also in road time gained, for you'll get

your vehicles back on the road . . . and earning . . . nearly twice as fast! You can increase your profits still further by using Jenny to clean tools, lifts, pits, driveways, windows, etc., 10 times faster than by hand cleaning methods.

Hypressure Jenny is safe and economical; and ordinary labor can operate it.

Write today for Free Booklet "1001 Ways to Extra Profits." No obligation.

HYPRESSURE JENNY DIVISION

HOMESTEAD VALVE MANUFACTURING CO.

Boeing since 1932

P. O. BOX 90 CORAOPOLIS, PA.

Council Meeting

Continued from Page 157

duct your operations with this thought in mind and to do everything possible toward preserving and maintaining your highway transport fleets so as to extend their periods of usefulness. While we are hopeful that conditions in the third quarter of the year will permit the allocation of materials to meet your needs, we cannot give any assurance that sufficient materials will

be available to produce (sufficient) quantities."

Mr. Cochran voiced the hope that additional regulations or controls would not have to be placed on the highway transport industry. He called for continued cooperation from vehicle owners and operators in a move to provide all the essential transportation required during this critical period.

Speaking for the Truck-Trailers Manufacturers, Inc., John B. Hulse warned that a freeze on trailer inventories would catch only about 5000 trailers, possibly a 30-day supply.

Looking ahead, he said that "we can expect the demand for truck-trailers to continue in 1952 as in 1950 and 1951 . . . that is, between 60,000 and 70,000 units." Noting that first quarter output authorized by NPA approximates 29,500 for civilian use, he felt that the rate of production should be increased to permit something over 65,000 units in '52. Mr. Hulse went on to suggest a three-point precautionary program which should be followed by carriers and the government to assure an adequate supply of vehicles: 1. Every owner should put his fleet in the best possible condition replacing obsolete and inefficient vehicles. 2. The government should encourage production of all the commercial vehicles that the carriers can absorb. 3. The government should allow continuation of commercial vehicle production even in the face of all-out war since "nothing will be more important than transportation."

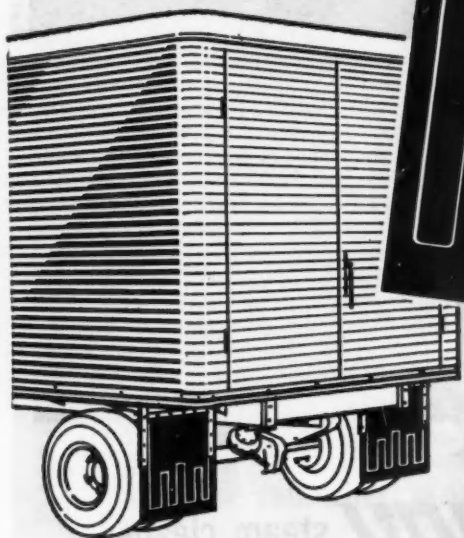
Speaking for the Automobile Manufacturers Assn. on the equipment situation, K. M. Richards called for a full recognition by the government of the essentiality of the trucking industry. . . . This would result in the allocation of sufficient materials to carry out all possible highway improvement projects, he said. "Present inadequate facilities and resulting congestion reduce the efficiency of truck transportation, and if allowed to continue, it would be disastrous."

In a report on the highway safety committee, F. A. Phinney, of the National Biscuit Co., outlined the Council's program of safe driving awards and citations set up to "stimulate greater interest and to spotlight outstanding achievement in accident prevention." He announced winners of

(TURN TO PAGE 169, PLEASE)

HEAVY DUTY RUBBER ARMOR-FLEX

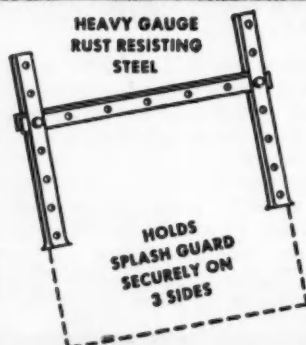
Splash Guards



FOR TRUCKS AND TRAILERS

SPLASH GUARD UNIVERSAL MOUNTING BRACKET

Designed to meet the most rigid road conditions. Built to withstand the abrasive action of mud, sand, stone and ice. Made of heavy-gauge molded rubber combined with woven fabric. A brass-plated steel bar imbedded into mounting-edge provides tear-proof grip for holding bolts. The Standard-Deluxe type is available in six sizes: 20" x 20", 20" x 24", 24" x 24", 24" x 30", 24" x 36" and 24" x 40". Pre-punched for easy mounting. Packed two per box.



Complete unit—specially designed to mount splash guards. Adaptable to fit any model truck or trailer. Packed one pair per box

Doan

MANUFACTURING CORP.
1761 LONDON ROAD • CLEVELAND 12, OHIO



"If Wilson starts off with 'Stop me if you've heard this one' . . . somebody stop him! Otherwise we'll be running a half hour late again."

EDWARDS

**TAILORS TRAILERS ON A PRODUCTION BASIS
TO FIT THE JOB THEY'LL HANDLE**



Need more inside body height? More width? Will those extra dimensions add to the ease of handling bulky freight... cut your overhead? Production line flexibility has been so highly developed by Edwards that you can get standard Edwards trailers practically "tailor-made" like this for your job.

Edwards trailers are engineered for hard work and full time duty. They incorporate

every construction feature that has proved sound in practice on the highway. They are built to keep rolling down the road, delivering the goods, for years to come.

You'll find Edwards "tailor-made" trailers are easy rolling, long-lived profit makers in your fleet.

Write today for details. Dept. C-3



CORRUGATED TRAILERS



HEAVY DUTY FLATS



SMOOTH PANEL TRAILERS



TRUCK BODIES



TRAINS—DOUBLE BOTTOMS



TANDEM HEAVY DUTY TRAILERS

EDWARDS

TRAILER AND BODY COMPANY

DIV. OF EDWARDS IRON WORKS, INC.
SOUTH BEND, INDIANA

Council Meeting

Continued from Page 158

these annual awards—the Gold Seal for those operating throughout the year without a single chargeable accident involving personal injury or property damage; the Red Seal, for those who reduced their frequency rate by 40 per cent or more; and the Green Seal, for those who reduced their accident frequency by at least 20 per cent.

Recipients of the Gold Seal were: Armour and Co.; Borden Co.; Butane Transportation Co.; W. S. Dickey Clay Mfg. Co.; National Biscuit Co.; Our Own Cooperative Assn.; Southern States Cooperative Assn.; Waples Platter Co.

Those receiving the Red Seal were: Alton Box Co., Anheuser-Busch, Inc., Yeast Plant; Armour & Co., Borden Co., Bridgeman-Russell Co., Dairyman's League Cooperative Assn., Lloyd A. Fry Roofing Co., National Biscuit Co., Prairie States Oil & Grease Co., C. Schmidt & Sons, Signal Oil Co.,

Southern States Cooperative Assn., Waples Platter Co.

The Green Seal was awarded to Armour & Co., P. Ballantine & Co., Borden Co., Bridgeman-Russell Co., Burlington Mills Corp., Dairyman's League Cooperative Assn., Lloyd A. Fry Roofing Co., National Biscuit Co.

Policy Statements Adopted

On Diversion—State highway users' taxes should be dedicated exclusively to highway purposes and not diverted for nonhighway purposes.

On Ton-Mile Taxation—The ton-mile theory of taxation is inequitable and impracticable for proper administration and should not be imposed in any form at any level of taxation; the only proper and justifiable forms of taxation now acceptable to the Council are motor fuel taxes and license or registration fees.

On Federal Transportation Tax—The Council opposes any application of an excise tax on transportation to private operation of motor vehicles or other transportation facilities by non-transportation enterprises.

On Project Adequate Roads—The NHUC-sponsored program "PAR (Project: Adequate Roads)" will be wholeheartedly supported by the Council.

On ICC Regulation of Private Carriage—Private transportation should be completely excluded from regulation under the Interstate Commerce Act; if subject to any regulation it should be limited to such as is necessary for private operators only.

On Redefinition of Private Carriage in Interstate Commerce Act—The
(TURN TO PAGE 162, PLEASE)

POSITIONING PROBLEMS? One of these AEROL products will solve them!

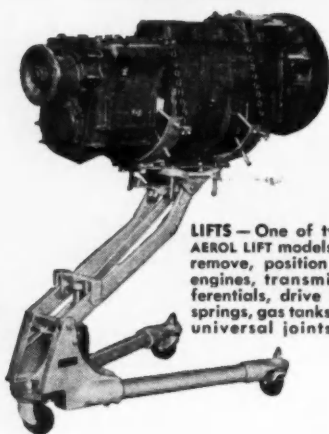


AXLE AND ENGINE STANDS
More than a dozen models—one of which is exactly right for your shop! Clayborne Standards are now AEROL products—the best in the industry.



DOLLIES—Five models for every shop and showroom problem. Use for teardown, assembly of parts and accessories, storage, steam cleaning, shop movement and display.

LIFT KITS—This is one of nine basic kits and limitless combinations of parts for every shop lift need—automotive or industrial. One- and two-ton capacities with ample safety factors.



LIFTS—One of two versatile AEROL LIFT models. Either will remove, position and install engines, transmissions, differentials, drive lines, axles, springs, gas tanks, crankcases, universal joints, tires, etc.

YOU'LL GET EASIER, faster, safer and lower-cost handling and positioning of automotive units with AEROL Service Equipment. And you'll get it at a price you can afford!

Send for your copy of the new AEROL catalog today. You'll find out *which* of these products you need, *how* it can help lick your shop costs.

AEROL Automotive Products are made by The Cleveland Pneumatic Tool Co., and sold only through jobbers. Distributed in Canada by Vic Mathewson Co., Toronto 14, Ontario.

THE CLEVELAND PNEUMATIC TOOL CO.

Automotive Division
3769 E. 77th Street Cleveland 5, Ohio
Please send me a copy of the new AEROL catalog.

Name _____
Street _____
City _____ Zone _____ State _____



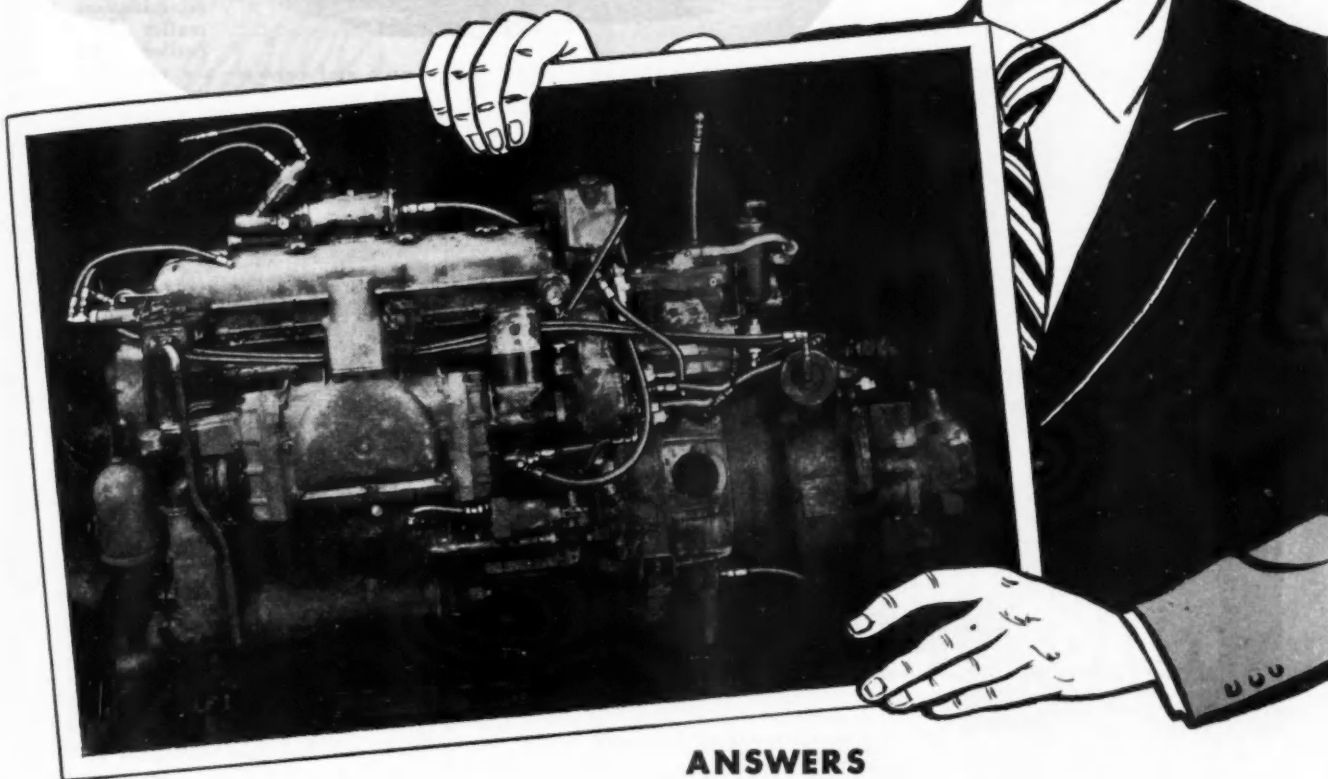
Quarry Dumper



There are three major changes in this 18-ton Sterling-White dump truck which have been added to make the unit more suitable for quarry or mining operations. It has the Sterling-White "Planetary Drive" rear axle equipped with an improved differential, which the manufacturers claim will deliver power to each rear wheel according to the grip dictated by road and load conditions. Also incorporated in the rear axle is a gear arrangement with the internal ring gear rotating around the sun gear and the idler or intermediate gears rotating on fixed centers. This permits using larger gears within the available space. The wheelbase is 161 in.

CAPT. EASY Says:

HERE'S A QUIZ FOR
TRUCK AND BUS MAINTENANCE MEN
WHAT'S YOUR SCORE?



QUESTIONS

1. How many hose lines can you count on this engine?
2. Why do most fleet operators replace metal lines with hose?
3. Who furnishes a complete line of heavy-duty hose and reusable hose ends?
4. What's so different about Weatherhead hose and hose ends?
5. What "extra" saving do you get from Weatherhead?

Score 20% for each correct answer. For all the answers send for Weatherhead hose catalog No. J-1503. Address: The Weatherhead Co., Dept. T, 300 E. 131st St., Cleveland 8, Ohio.

The **EASY** line to handle is..

ANSWERS

1. 17 show in photo.
2. To lick vibration—avoid breakdowns, road delays.
3. You guessed it!
4. Hose assemblies can be made up as needed. No big inventories of made-up assemblies. Simply keep hose in bulk, cut and attach with ends as needed... only ordinary bench tools required.
5. Rugged, all-steel Weatherhead hose ends are REUSABLE.





Oil Well Truck

Unusual in appearance and design, this oil well service unit is one of the latest products of Kenworth Motor Truck Corp. It was produced in the Seattle, Wash., factory for the Franks Mfg. Co., of Tulsa, Okla. The vehicle is actually a combination full trailer and semi-trailer. The power

unit and controls are mounted in the full trailer at the rear; the cab and steering wheel are mounted on the front semi-trailer.

Council Meeting

Continued from Page 160

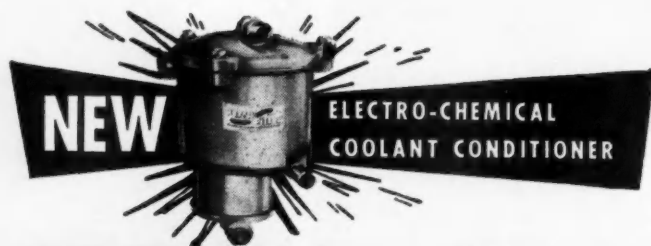
Council sees no need for any change in the definition of private motor transportation in the Interstate Commerce Act in light of the ICC and court holdings in the Lenoir-Schenley-Brooks cases. However, if further definition is deemed desirable by Congress, the Council reaffirms its position that the "primary business test" should continue to be the basis for any such redefinition, and whether or not the definition of private transportation is revised, such definition should be for the purpose of exclusion from regulation.

On the Agricultural Exemptions Clause—The Council is now on record as supporting the agricultural exemptions clause, and in principle, this support is reaffirmed. As long as the exemption is in effect, there is no justifiable reason to restrict private operators from engaging in hauling exempt commodities without regulation while allowing other forms of motor transport to continue such activity. If the existence of the exemptions clause is causing inequities within or damage to the for-hire transportation industry, the problem should be attacked directly, not by the discriminatory course of restricting the private operator. Congress should take the initiative in the matter, and clearly state its position as to the solution; it should not shirk the decision by delegating complete discretion to the Interstate Commerce Commission to deal with the problem, thereby leaving the decision and responsibility in the Commission's hands.

On Leasing Practices—Bona fide leasing of motor vehicles has a legitimate place in the operations of private motor truck owners, if, in the leasing arrangements, all the characteristics of private transportation are preserved.

On Taxation—All highway users along with other beneficiaries of pub-

(TURN TO PAGE 164, PLEASE)



NEW

**ELECTRO-CHEMICAL
COOLANT CONDITIONER**

The Original and Only
ELECTRO-CHEMICAL
Perry
COOLING
SYSTEM
filter
and CONDITIONER

5-way PREVENTATIVE MAINTENANCE FOR cooling system protection!

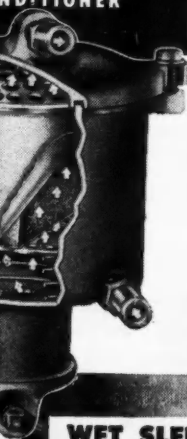
The Perry Filter is economical to buy, easy to install on any gasoline or diesel-powered engine. For the first time, best known methods are combined to protect the entire cooling system against (1) rusting (2) pitting (3) hardness deposits (4) acid or alkaline conditions and (5) insoluble impurities in the coolant.

Only the Perry Filter provides electro-chemical protection from electrolytic destruction of metals in the cooling system.

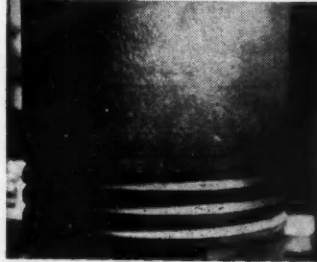
*Write
today!*

**FOR COMPLETE
DETAILS**

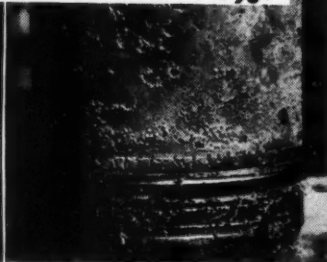
Full information without cost or obligation gladly furnished. Sold through leading automotive, diesel, and stationary engine distributors in 48 states.



WET SLEEVE PITTING REDUCED 70%!



Cylinder sleeve from engine having Perry Filter protection since original purchase



From same type engine—72 weeks with conventional inhibitors (soluble oil) only

SPARK-O-LINER CORPORATION

DEPT. CCJ • 601 11th Avenue South • MINNEAPOLIS 4, MINN.

All your accounting done

*faster,
easier,
at less cost*
with
Burroughs

In the shop, on the road, or in the office, old-fashioned methods are profit-eaters. Mechanized accounting, the *Burroughs* way, offers you simplified accounting—done *faster, easier*, with *greater accuracy*. And this means lower costs, *more profit* for you.

In addition to the new line of Sensimatic accounting machines, Burroughs has other, fast, and flexible figure-handling machines which eliminate much of the time-consuming clerical effort required for keeping complete and accurate, *up-to-date* records. Burroughs representatives are familiar with the problems of motor freight accounting too. Their counsel in the mechanization of record-keeping has helped many motor freight companies to reduce materially the costs of accounting—as well as to have statistical information at hand *when it is needed*.

Why not write today for the free booklet, "Complete Accounting for Motor Freight Companies." It points the way to new record-keeping efficiency for you. Use the convenient coupon at right.

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Burroughs



REVENUE
EXPENSE
GENERAL LEDGER
DISBURSEMENT
PAYROLL



This is one of the amazingly versatile Burroughs Sensimatic Accounting Machines that bring new speed and economy to motor freight accounting.

BURROUGHS ADDING MACHINE COMPANY,
DETROIT 32, MICHIGAN

Please send me a copy of "Complete Accounting for Motor Freight Companies."

Name _____ Address _____

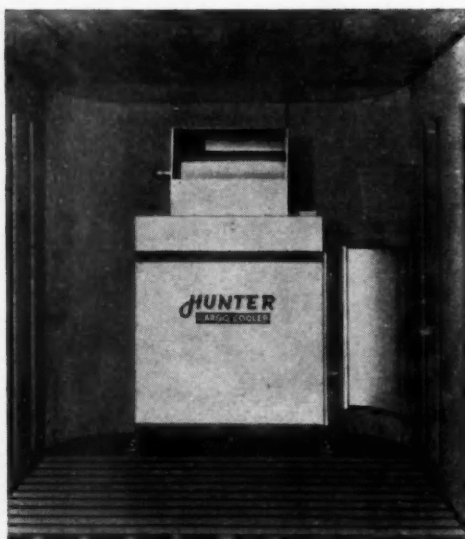
City _____ Zone _____ State _____

Company _____ Title _____

The HUNTER CARGO COOLER makes

Road Failures Impossible

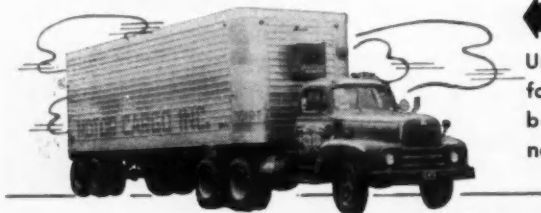
in TRANSPORT REFRIGERATION



● The Hunter Cargo Cooler is a complete, thermostatically controlled, forced-air-circulation, dry ice refrigeration system. It provides highly effective, constant and uniform refrigeration throughout the cargo. It is *absolutely dependable*—even when the vehicle engine and battery system fail with no standby power available, gravity flow of refrigerated air through the Cargo Cooler circulation system makes *total refrigeration failure impossible* as long as a supply of dry ice is maintained in the bunker.

These Features Explain Why More Fleets are Converting to Cargo Coolers

- **MAXIMUM RELIABILITY** — eliminating numerous damage claims.
- **MINIMUM MAINTENANCE** — greatly reduces upkeep and repair expense.
- **BIGGER PAYLOADS** — the Cargo Cooler weighs only 300 lbs.
- **QUICK TURN-AROUNDS** — no long tie-ups for servicing.
- **HIGH CAPACITY** — holds 600 lbs. dry ice, can be re-iced in transit through access door on trailer.
- **REFRIGERATING ABILITY** — zero to 60°, thermostatically controlled.
- **COMPACT** — only 19" deep, 48" wide, 75" high.
- **LOW COST** — low first cost, low operating and maintenance cost.



Under power control, refrigerated air is forced over, around and under all parts of cargo.



With power down, gravity flow of cold air under cargo prevents total refrigeration failure.

◀ Cargo Cooler also available in Combination Units with Heater. Housing for controls, fuel tank and batteries is mounted on nose of trailer.

Send for complete data on Cargo Cooler, Heaters, Combinations

HUNTER MANUFACTURING CO.

1550 E. 17th STREET

CLEVELAND 14, OHIO

Send me complete information on units checked

____ CARGO COOLER ____ CARGO HEATER
____ COMBINATION UNIT ____ CAB HEATER

NAME _____

ADDRESS _____

CITY _____ STATE _____

Council Meeting

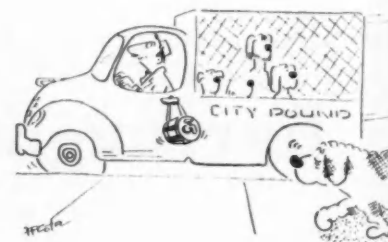
Continued from Page 162

lic highways should pay their fair and proper share of the cost of building and maintaining such facilities. Private motor truck owners want improved highways which make for more efficient transportation and willingly pay for adequate facilities when the allocation of cost is proportionately distributed and equitably shared by all classes of highway users and beneficiaries.

Motor vehicle use taxes, however, should be kept at reasonable levels according to needs and with full consideration of the user's ability and willingness to pay. Such taxes should be levied upon and in accordance with the use made of the highways by the beneficiaries thereof, including the transportation of the mails and the potential requirements for national defense. To avoid overlapping and pyramiding taxation, highway use taxes should be levied only by the states, with fair sharing with other units of government. Highway tax revenues should be used only to build and maintain roads and streets, put to use without delay, and so administered as to gain the most efficient results per dollar and to secure the highest return to the greatest number of highway users.

EVD

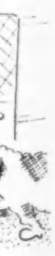
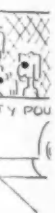
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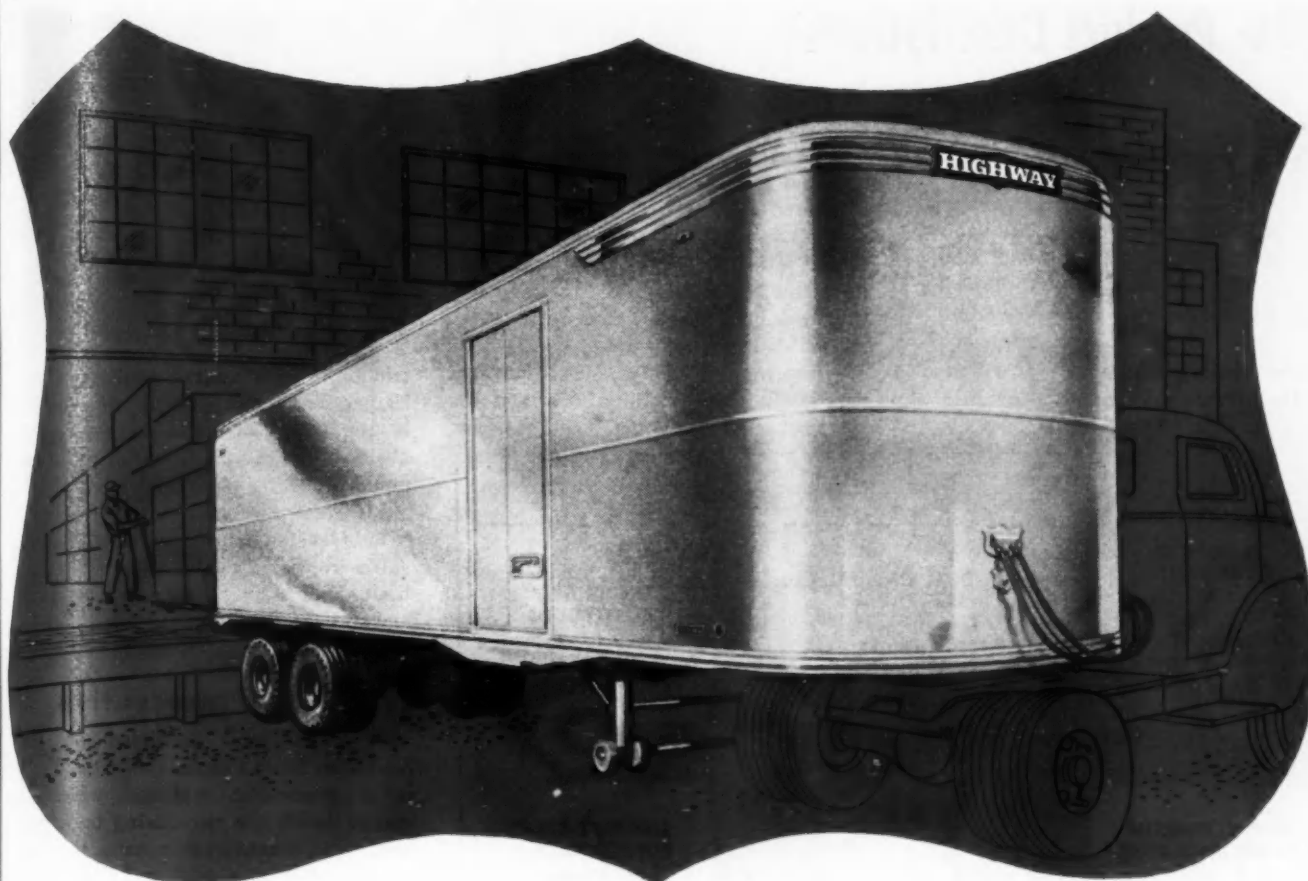
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77



h, 1952



you'll save plenty with a **HIGHWAY ALL-ALUMINUM Trailer**

SAVE WEIGHT — Carries from 2,000 to 2,700 lbs. more load per trip. Highway's Stress Panel Construction makes every ounce of metal work to carry the load. That's why there is no wasted weight.

SAVE BODY REPAIRS — The strength secured through Stress Panel Construction keeps the trailer out on the road longer and in the shop less of the time. It's road time that pays profits.

SAVE AXLE MAINTENANCE — The rugged simplicity of Highway's single and tandem axles keeps maintenance costs at a minimum. Only two moving parts and two lubrication points . . . no wonder they seldom need attention.

SAVE REPLACEMENT — The strength that's designed and built into every Highway Trailer gives them a mighty long life. It's a fact: Highway delivers more trailer for your dollars than you can buy elsewhere.

The Highway All-aluminum trailer is adaptable for most hauling needs. Available in lengths from 26' through 34'; single or tandem axle; light insulated, heavy insulated, or refrigerated; wood or extruded aluminum flooring; side or rear doors . . . here's the Highway for your fleet. Call the friendly Highway distributor or factory branch nearest you for assistance with any of your hauling problems or for more information about the All-Aluminum trailer.

HIGHWAY TRAILER COMPANY • Headquarters: Edgerton, Wisconsin



PLANTS AT
Edgerton, Wisconsin
Stoughton, Wisconsin



MANUFACTURERS OF
Trailers, Trailerized Tanks
and Truck Tanks • Utility
Truck Bodies • Earth Bor-
ing Machines • Pole and
Cable Reel Trailers •
Winches • Power Take-
offs • Service Accessories

DESIGNED, BUILT, SERVICED — *"Always a little better."*

New Product Descriptions

Continued from Page 79

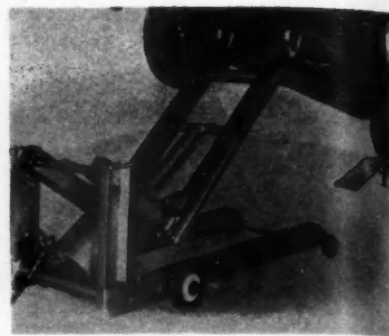
P173. Portable Lift

A redesigned model Lee portable end lift has been announced by Automotive Equipment Mfg. Co., Lynwood, Calif., for use in body and fender shops for undercoating, greasing and steam cleaning.

The Model 52 is said to have a new, wider frame design which allows

greater freedom of action on either side and to the rear of the lift. It may be moved and stored by one man. The manufacturer states that easier operation, without surging, is afforded through the use of a two-stage air control valve, one for slow travel, the other for full pressure and speed.

The design eliminates several moving parts, with the resulting reduction of



friction. The manufacturer states that 20 per cent less operating air pressure is required. Piston rod jamming is avoided by the addition of a sleeve guide welded to the cylinder head. This guide keeps the rod running true, even if the elevated vehicle shifts. A pop-off valve releases pressure at elevation limit and a mechanical safety latch locks the lift at any of ten working heights.

P174. Tire Preservative

"Pro-Tex-Tire," marketed by the American Sand-Banum Co., New York, is a grease-like material which is spread inside the tire casing to reduce heat. The manufacturer states that extensive laboratory and road tests have indicated that the running temperature of tires under full load was considerably decreased by use of the material without damage to the tire or tube.

P175. Route Maps

A complete set of maps of the larger cities shows various through and direct routes in color codes. The map maker, Herne Brothers of Detroit, Mich., makes these maps in large print, so that the roads and streets in any given area stand out clearly. A fine coat of plastic material makes it possible to mark a route in crayon.

P176. Truck Paint

Bruning Brothers, Inc., of Baltimore, Md., has added a truck-tractor paint to the line. The paint may be used for either interior or exterior work and is available in standard vehicle colors.

The manufacturing process used by Bruning involves the use of an alkyd resin. It is marketed under the name "1001 Automotive Enamel" and may be applied with brush or spray gun.

P177. Smoke Alarm

An alarm system that warns on a master control panel of the existence of smoke in a remote area has been marketed by the Electro-Mechanical division of American Encaustic Tiling Co., Lansdale, Penna.

(TURN TO PAGE 168, PLEASE)

SHROUDED DESIGN
Permits higher insulator temperature (less fouling) and lower electrode temperature (longer life).

DUAL GROUND ELECTRODES
Less gap-growth—double electrode life.

SHROUDED ELECTRODES
Protected from the hot flame sweep.

H. T. ALUMINUM OXIDE INSULATOR
Dissipates heat faster, has more compressive strength.

AIRCRAFT SOLID COPPER GASKET
Does not loosen in service—assures proper cooling of plug.

WIDER HEAT RANGE
Hot enough to retard fouling, yet electrode life increased.

WIDER GAP SETTING PERMITTED
Improves idle and slow-speed performance.

PERFORMANCE RATED
Exact heat range indicated on every plug.

X-RAY TESTED
Each plug is X-ray inspected for possible internal defects.

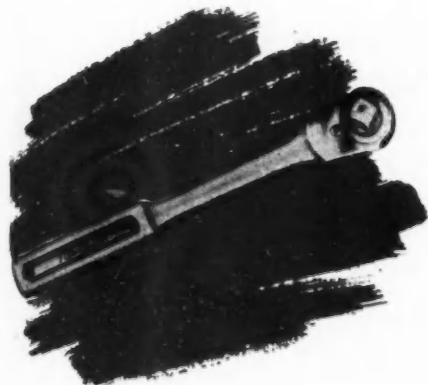
HASTINGS
Aero-type-Shrouded
SPARK PLUGS

Write for illustrated catalog
SPARK PLUG DIVISION • HASTINGS MANUFACTURING CO., HASTINGS, MICHIGAN
Spark Plugs, Piston Rings, Oil Filters, Camite, Drout

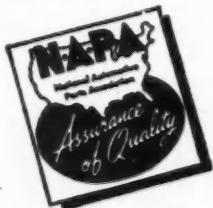


WHO'S A CAPITALIST?

YOU ARE! . . . and so is every other independent American Mechanic! You're a capitalist because you own means of production. Maybe not railroads or steel mills, but Tools, like that New Britain Ratchet you're holding. You liked it, and you bought it (nobody stops you). You work with it as long and as hard as you wish (nobody limits you). You buy what you please with the money it helps make . . . more New Britain Tools, or even a little piece of a railroad or steel mill in the form of stock (nobody objects). You own that Ratchet as well as all the other New Britain Tools in your Kit, and you have full control of the money they make. So you're a capitalist. Not bad, either . . . beats anything you'll find anywhere else in the world! Let's keep our American system — and work to make it better.



NOTE TO OTHER CAPITALISTS:
Before you invest in more means of production, ask your Jobber about New Britain Hand Tools. A complete high quality Line for every Tool need.



New Britain

GREATER STRENGTH · BETTER FIT

THE NEW BRITAIN MACHINE CO. • NEW BRITAIN, CONN.

HAND-TOOLS

COMMERCIAL CAR JOURNAL, March, 1952

New Products

Continued from Page 166

Connected to a 115-v fused power source, a light beam projector is rigged in one end of an area 150 ft by 30 ft. A three-conductor low voltage wire is extended to the sensor unit, located on the opposite side of the area. The sensor receives the beam of light from the projector and the circuit is complete. When the circuit is broken by a smoke as dense as that of a cigarette, a light

flashes on the annunciator panel. In addition to a flashing warning light on the panel, the system may be wired to actuate any type of horn, siren, lighting system, bell or other alarm device.

P178. Cleaner

An odorless liquid degreasing compound that can be used for cleaning equipment, painted body areas or garage floors has been developed by the Steward-Hall Chemical Corp., Mt. Vernon, N. Y., under the trade mark "Super Greasemaster."

The solvent is diluted with from three to eight parts of kerosene or light fuel oil. It is then sprayed on the area to be cleaned by a spray hose or gun. The surface is then hosed with water. No drying is necessary.

P179. Exhaust Analyzer

The Allen Electric and Equipment Co., Kalamazoo, Mich., has developed a new heavy-duty combustion analyzer, identified as Model E-806, for use in dynamometer tests.

For use on all types of gasoline and butane-propane engines, including trucks, tractors, and buses, the E-806 is equipped with a new tail pipe unit with large cooling fins and built-in water trap. These features are said to promote efficient condensation and rapid water elimination, so necessary when testing engines under load, as in the case when the unit is used in dynamometer tests.

Electrical connection between the tail pipe element and the analyzer unit eliminates use of an exhaust gas sampling hose. According to the manufacturer, this feature greatly reduces the time required for changes in the gas to register on the meter scale. Also, there is no danger of exhaust gases in the driver's compartment during road tests. As no external power is required to operate the 806, tests may be made on the road, in the shop, free-running or under power, as desired.

P180. Shaft Regrinder

The newly designed RCG crankshaft regrinder made by Lempco Products, Inc., Bedford, Ohio, has capacities up to 137 in. It has a 360-deg graduated throwhead that enables the operator to move from one set of throws to another in one set up. The in-feed and retraction of the grinding wheel is accomplished hydraulically without cranking. The shaft is balanced by a permanent outboard balancing system that can be adjusted without interfering with swing or stroke.

P181. Gas Mileage Check

An electrically-operated device, produced by Kent-Moore Organization, Inc., Detroit, proves the exact number of miles per gallon used by the vehicle. It is connected to the carburetor by two hoses and to the battery by two leads.

The test gage in the instrument is filled from the vehicle's fuel supply. A mileage reading is taken at the beginning of the test when the gage is full. When the gasoline level reaches the low mark on the gage, a second reading is taken. The gasoline consumption rate is then computed.

(TURN TO PAGE 170, PLEASE)



LONG LIFE!

Pyrene Vehicle Type Extinguishers

give at least twice the service

life of ordinary vaporizing

liquid extinguishers!

Vibration is the big enemy of fire extinguishers mounted on trucks and buses. Vibration beats on the parts—can knock them out of kilter—make the extinguisher inoperative.

But Pyrene* has licked vibration!

Special construction features, found *only* in Pyrene, are the answer. In every 1 qt. and 1½ qt. Pyrene Vehicle Type Vaporizing Liquid Extinguisher, a special vibration dampener holds the pump mechanism firmly in place, protecting it against both vertical and horizontal vibration. And tough brass linings guard the valve housings in every spot where wear could occur.

In competitive vibrating machine tests, a Pyrene Vehicle Type Extinguisher outlasted three other major brands by more than 2 to 1 . . . the ratio going as high as 15 to 1.

Half life is no bargain. Buy on facts . . . buy long-lived Pyrene!

*T.M. Reg. U.S. Pat. Off.

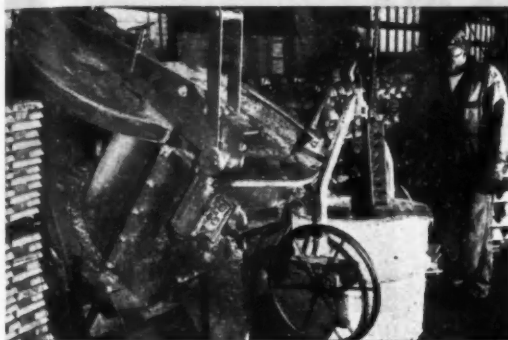
Pyrene
REG. U.S. PAT. OFF.

FIRE EXTINGUISHERS

PYRENE MANUFACTURING COMPANY
589 Belmont Avenue • Newark 8, N.J.
Affiliated with C-O-Two Fire Equipment Co.



Raw material storage room where ingots are held for laboratory analysis. Temperature and humidity is controlled to prevent moisture pick-up.



Electrically operated melting furnace in the Thompson foundry being tapped. Molten metal is held in electric holding furnaces at the casting operation.



A modern high-pressure, cold chamber die casting machine in operation at Thompson Products Light Metals Division foundry.



The dependable uniformity of Thompson cast pistons keeps scrap losses at a minimum and assures closer tolerances in this Thompson finishing department.

YES...Thompson REALLY MAKES THE PISTONS!



Heavy-Duty
Diesel Piston



Steel-Belted
Piston



Aircraft
Piston

THOMPSON RESEARCH, engineering, foundry operations, machining and finishing didn't just happen. There's over 50 years of experience in precision manufacture of automotive and aircraft parts back of every Thompson piston.

From carefully selected raw materials laboratory analyzed and held in air conditioned rooms before being used, through melting and holding furnaces, cast in the most modern and efficient high pressure or permanent mold casting machines, and finished by expert machine operators—you get *durable* pistons.

Thompson warehouses are well stocked with pistons. There's no waiting when you need pistons for cars, trucks, buses, tractors, marine and industrial engines—practically all years and models. Thompson Products, Inc., Service Division, 2209 Ashland Road, Cleveland 3, Ohio.

See Your

Thompson



Products

Jobber

IN ALL PRINCIPAL CITIES

New Products

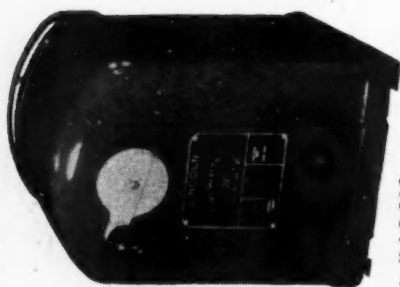
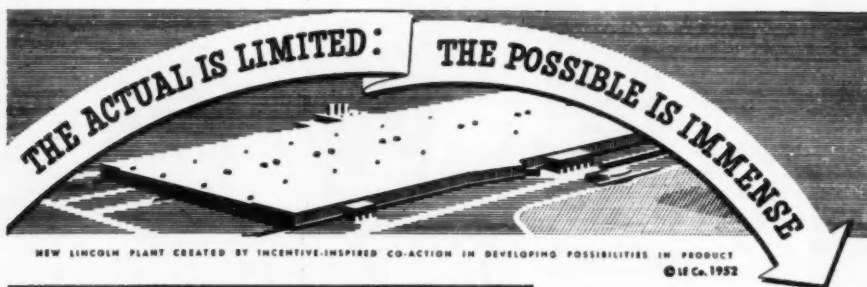
Continued from Page 168

P182. Suction Cleaner

This new vacuum cleaner for vehicle interiors has been developed by Vibro-Pneumatic Cleaner division of Patterson Products, Detroit, Mich.. Featuring a dual operation, the unit uses one finger-tip control valve to operate the cleaner while a second valve causes an external jet of air to be directed forward through

an opening in the head blowing dirt and other particles from inaccessible places

to spots where they may be picked up by the suction action.



CUTS COSTLY MAN-HOURS TO SPEED REPAIRS

Takes Less Skill. Even the inexperienced welder now produces sound welds in a minimum of time... with a minimum of cost. With "Fleetwelder" there is no more bothersome electrode sticking. Its "Arc-Booster" starts the arc the instant the electrode touches the work.

Insures Quality Welds. Instant penetration at the start of each weld, plus "Fleetwelder's" steady, easy-to-hold arc in all positions assures strong, uniform welds on cast iron and steel.

Simple to Use. Light, portable... moves easily about the shop. Simple to install... operates on single phase current.

"Fleetwelder" AC-200 Versatile, low priced Lincoln AC arc welder handles $\frac{3}{16}$ to $\frac{1}{4}$ " electrodes. Rugged, industrial type construction... yet sells for less than other comparable welders.

REINFORCES REAR BUMPER



Fig. 1—Prevents Trailer Damage from backing into docks. Parts are cut from steel plate and welded to trailer frame with Lincoln "Fleetweld 7" electrode.

SAVES DOOR



Fig. 2—Repairs Crack. Crack in door is welded in just a few minutes with the Lincoln "Fleetwelder" AC-200. Welded repair saves valuable time and cost of obtaining replacement unit.

SHORT CUTS REPAIRS

Write for Bulletin 1301 on "Fleetwelder" AC-200

THE LINCOLN ELECTRIC COMPANY

DEPT. 321, CLEVELAND 17, OHIO

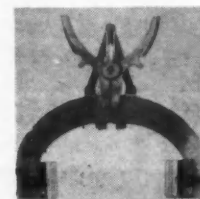
The World's Largest Manufacturer of Arc Welding Equipment

The cleaner operates from a standard air compressor system of 80 psi or more capacity. It has a standard nozzle width of 5 in., 8 in., and 10 in., with wand lengths from 14 in. to 6 ft, depending upon the requirements of the application. The total weight of the unit is 7½ lb. Several sizes of cast-iron tank models are also available for wet or dry cleaning.

P183. Governor

By interrupting the current flow from the magneto, F. T. Griswold Mfg. Co., Wayne, Penna., proposes to reduce speeding in all trucks with spark-ignited engines. The governor, set at a definite rpm, is built into Griswold's "Vertex" magneto. When the speed is reached the current is interrupted until the vehicle returns to the proper limit. The governor equipped magnetos are built to specifications. Speed settings cannot be altered in the field but can be reset at the factory.

P184. Ring Tool



For installing and removing piston rings from 4½ in. to 7 in., Zim Mfg. Co., Chicago, has announced a new expander, Model 201 for rings 2 in. to 4 in.; the Model 203 for 1¼ in. to 2¼ in. and the Model 204 for larger measurements.

END

Please Resume Reading Page 80

COMMERCIAL CAR JOURNAL, March, 1952

Is YOUR fleet
getting this kind
of engine
performance?

...city bus service

Fifteen stops per mile and 3,100 miles per bus per month represent the service required of 67 buses run by Berkshire Street Railway, Pittsfield, Mass. With Shell Rotella Oil the small gasoline bus engines average 0.003" bore taper at re-ring. Bearing wear is negligible . . . shaft wear 0.001". No valve service is required until short block installation, at about 80,000 miles.



Only 0.003" bore
taper at re-ring.

...in highway service

Motor Car Transport Company, Pontiac, Michigan, has used Shell Rotella Oil in all units of a fleet of 135 tractors for more than three years. Tractors average 8,000 miles per month each. Valve service life is as high as 100,000 miles from new. No other service is needed on these engines. Oil screens, valve chambers, and piston assemblies remain clean. Some tractor units have gone 159,000 miles without removing the pan.



Up to 159,000 miles
without removing the pan.

...city taxi service

Before The Diamond Taxi Co., Lowell, Mass., adopted Shell Rotella Oil, their cab engines were "plagued" by sludge. Now . . . at 75,000 miles when new rings are installed, the engines are sludge-free with negligible cylinder-wall wear. *Bearing replacement is unnecessary and only one re-ring and valve grind job is done during the 100,000 miles of useful cab service.* (Previous cab mileage only 55,000 miles.)



Cab life extended
by 45,000 miles

"All above use
**SHELL
ROTELLA
OIL**
Exclusively"



Send coupon
for the book!



SHELL OIL COMPANY

50 West 50th Street, New York 20, N.Y.

100 Bush Street, San Francisco 6, California



SHELL OIL COMPANY

Please send me the Shell Rotella Oil Book.

Name _____

Address _____

City _____ State _____

CCJ LEGAL CORNER



Trucks May Trespass Too

Be Sure They Go Only Where Authorized

▼ A DELAY in canceling trip orders usually results only in wasted gasoline, labor time and overhead. In some cases, however, an unordered trip may void insurance, make the truck a trespasser, and subject the owner to all kinds of law suits.

This happened to the St. Petersburg Coca-Cola Bottling Co. They had received an order to pick up a batch of empty bottles at a beverage distribution warehouse, a converted barn behind a private house. The dispatcher gave the order to one of the drivers, but it was almost three weeks before the driver got around to making the pickup. In the meantime the distributor brought the empties in himself and canceled the pickup order.

Somewhere along the line the cancellation didn't get to the driver so he drove into the driveway beside the house after the bottles. While in the driveway he ran over a five-year-old girl, seriously injuring her.

As so often happens in these cases, the exact facts surrounding the accident were uncertain and in dispute. In this particular case the fleet operator didn't have a chance. The judge decided that the truck was trespassing on private property, that it had no business to be there. If the accident was the fault of the little girl and the driver was extremely careful the company was still responsible for damages.

The Judge Decides

"The defendant, Coca-Cola Co., cannot shield itself behind the good faith and innocent intentions of its driver when it possessed knowledge which rendered the entry unjustified and withheld that knowledge from its employee operating the truck.

"We do not overlook the rule that the maintenance of a place of business, or even a home, may constitute an implied invitation or license to persons having business with the occupant to enter the premises; nor have we failed to carefully examine all evidence favorable to the defendant including the sign erected by Beverage Distributors with the acquiescence of plaintiff's father. But there is no evidence that the defendant at the time and place of the entry had, or had any reason to believe that it had any proper occasion to have its truck upon the premises."

Even if Coca-Cola could prove that the injury resulted from an unavoidable accident, they still must pay the damages as 'unavoidable accident' is no defense to an action for trespass."

In other words, *make sure your trucks go only where they are supposed to go.*

LISTEN to Your Compressor...

too frequent running costs you money!

FLEET OPERATORS:

Champion has over 58 separate models of Air Compressors to fit your needs. Tell us the number of vehicles you service and we will gladly make our recommendations for the size and type of Compressor you need.

automotive type CONNECTING RODS and BEARINGS CUT RUNNING TIME!

Compare before you buy your next compressor. One of the points worth checking are the connecting rods. Champion's connecting rods are extra strong, sturdy, drop forged steel. The babbitt-lined bearings have laminated shims for easy take-up. Wrist pins are hardened and ground, full-floating with hydro-lapped finish. When you combine these Champion features with such exclusive developments as straight-line air flow, domed pistons and cylinders and special quick-acting plate valves, you know you have a compressor that can't be beat!

See your Champion Jobber TODAY or write for the new informative Champion Catalog NOW!

CHAMPION PNEUMATIC MACHINERY CO.
829 N. Pleasant St., Princeton, Illinois

CHAMPION

AIR COMPRESSORS

CAR WASHERS • AIR HOSE REELS • SERVICE TOWERS • CEILING SWIVELS



"A GOOD LOOKING FLEET *Helps Build* Good Dealer Relations and Promotes Sales"

says **JOHN DRENIK**, president
Drenik Beverage Distributing Inc., Cleveland, O.

EXACT DIMENSIONS OF LS ASSURE COMPLETE UNIFORMITY OF FLEET'S TRUCK BODIES

A good looking fleet has a good effect on business—according to the experience of John Drenik, president of Drenik Beverage Distributing Inc., Cleveland 23, Ohio.

Here is what Mr. Drenik recently wrote his body manufacturer, The Carnegie Body Company of Cleveland, Ohio:

"My growing business demands modern equipment. Experience has proved Lindsay bodies' smart streamlined appearance helps to build good dealer relations and promotes the sale of a fine beverage, Budweiser.

"My fleet of 14 Lindsays is always in top shape because Lindsay Structure is easy to maintain and repair—its exact dimensions gives my fleet complete uniformity of good appearance."

For handsome appearance, uniformity of design, rugged durability and low-cost maintenance—specify Lindsay Structure for your next made-to-measure truck bodies. We will gladly work with you and the body manufacturer of your choice. Write today for full information.

LINDSAY
LS STRUCTURE
Lindsay Structure, Inc.
5000 West Dempster St., Skokie, Illinois
U. S. Patents 2017629, 2263510, 2263511
U. S. and Foreign Patents and Patents Pending



GUN IRON* BRAKE DRUMS LAST more than TWICE as long

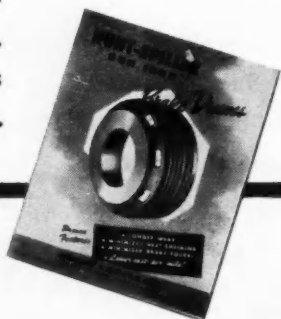


* New high-carbon alloy of Gun Iron developed expressly to minimize heat-checking and squeal. Proved to give even longer life than previous Gun Iron Drums, the original cast brake drums.

IN INDEPENDENT TEST! Gulf Transport Reports:

"Results of tests using Hunt-Spiller Gun Iron Brake Drums have been very satisfactory and we are taking steps to standardize on them. The most we have been able to get from other rear drums was about 90,000 miles before turning. One set of Hunt-Spiller rear drums went 125,000 miles before turning, and after turning, have been operated 90,000 miles and is still going strong. A set of Hunt-Spiller front drums is still in service after 199,000 miles without turning. The value in savings in labor, replacement costs and road time lost to our fleet are obvious."

This is typical of the reports coming in from truck and bus fleets all over the country. In addition to increased wear life, heat checking and squeal are virtually eliminated in these great new H-S drums. And since Gun Iron has a very low coefficient of expansion, "fade" is reduced to a minimum. Why not get in on these proven savings yourself? Our representative will gladly give you all the facts. Built to original equipment specifications for most buses and trucks; fully guaranteed.



SEND FOR FREE BULLETIN

This bulletin gives the whole story on Gun Iron Brake Drums. It also contains actual proof of their economies on buses and trucks.



HUNT • SPILLER

MANUFACTURING CORPORATION

AUTOMOTIVE DIVISION

399 DORCHESTER AVENUE • SOUTH BOSTON 27, MASS.

Pallet Loading

Continued from Page 54

each route. These are made up according to individual driver orders submitted the day before. An order clerk makes up large tags, shown in Figs. 6 and 7, for each vehicle. These cards are hung on hooks suspended from the ceiling along the conveyor, shown in Fig. 4. As the required dairy products are placed on the conveyor, the order men remove them, as designated by the card, and place them on pallets standing by the conveyors.

About 3:00 A. M. the loading crews and some of the drivers arrive at the plant. Each route driver opens the rear doors of his truck and backs it to the dock in a prescribed order. Meanwhile lift operators pick up the pre-loaded pallets assigned to each route, bring them out on the dock (Fig. 10) and place them directly in the waiting truck.

END

Please Resume Reading Page 55

Tanker Operators Report

Almost 30 billion gallons of petroleum products were hauled during the 12 months ending June 1, 1951, by the 1063 for-hire tank truck operators in the United States. This was revealed in a report adopted by the National Petroleum Council, Committee on Petroleum Transportation.

The report shows that the for-hire tank truck operators covered approximately 817 million miles during the period involved. These carriers operate 13,488 complete units in general petroleum service, with an average capacity of 5414 gal each, and a total carrying capacity of 73,024,635 gal.

The census also showed that of the 13,488 general purpose tank truck units operated by for-hire carriers, 10,613 were tractor—semi-trailers, and 2875 were trains consisting of straight truck and full trailer, or tractor, semi- and full trailer.

Pressure equipment consists of 506 units with a total water gallon capacity of 2,580,252 gal and an average of 5099 water gal each. There are 171 units hauling sulphuric, muriatic or nitric acids for-hire, with a total capacity of 567,888 gallons for an average of 3321 gal each. Other types of special tank equipment designed for hauling asphalt, certain other chemicals, latex, glue, caustic soda and others totaled 1381 units with a total capacity of 5,715,283 gal and an average capacity of 4139 gal.

COMMERCIAL CAR JOURNAL, March, 1952

FRUEHAUF *GRAVITY TANDEM* CUT MILEAGE COSTS WAY DOWN

FOR BALTIMORE TRANSFER CO.



WARD BENNETT
Supt. of Automotive Equipment
Baltimore Transfer Company

"I feel that we have very excellent results with the Gravity Tandems from a cost standpoint"

Mr. Ward L. Bennett, Superintendent of Automotive Equipment of Baltimore Transfer Company, adds, "The tire mileage that we have been obtaining with this type of tandem assembly has been outstanding. The

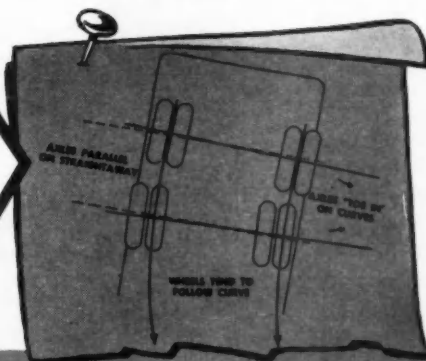
experience that we have had with all the Fruehauf assemblies has been excellent and I feel that this has been a real contribution to our success and our being able to win the Shop Excellence Award."



BALTIMORE TRANSFER COMPANY RECEIVES TRANSPORT TOPICS TRUCK SHOP EXCELLENCE AWARD for-hire carrier class — 250-700 units.

The best way to cut Mileage Costs is to INCREASE MILEAGE PER TIRE!

SELF-STEERING ACTION — Note how axles "toe-in," giving wheels free rolling properties — thereby reducing tire wear.



The Tires ROLL—Not SCUFF!

Fruehauf Gravity Tandem Design gives each wheel self-steering action, and provides each Trailer with constant proper axle alignment. Tire scuffing and scraping, regularly encountered on curves with conventional tandems, is removed, MILEAGE PER TIRE is GREATLY INCREASED!

World's Largest Builders of Truck-Trailers
FRUEHAUF TRAILER COMPANY
Detroit 32, Michigan

See the new film release—"FRUEHAUF GT—The Tire Saving Tandem"—right in your office—by calling your nearest Fruehauf Branch.

BETTER BRAKING

Brake action is smooth, effective and even. Brake force is transmitted directly up to the frame—not to other wheels. Wheel hop and brake fight are eliminated.

INCREASED FUEL ECONOMY

Fruehauf Gravity Tandem units pull more easily, roll more freely. Axles remain in constant close alignment, cutting resistance, tire wear and fuel consumption.

EASIER RIDE

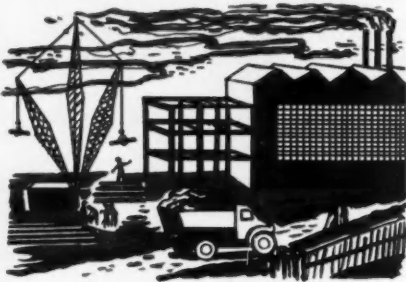
A smooth ride is always desired—many times DEMANDED by fragile cargoes. The Gravity Tandem combines lowest unsprung weight with resilient Torsion-Bar springing to give the smoothest ride on the road.

LOWER MAINTENANCE COSTS

Combine these money-saving advantages: increased tire mileage, greater fuel economy, smoother ride, easier pulling. The result is by far the lowest maintenance cost in proportion to performance in the industry.

only **FRUEHAUF** has the Gravity Tandem!

FACTORY FLASHES



Ansul Chemical Co., Marinette, Wis., has moved the fire extinguisher sales offices to larger quarters in the Detroit and Milwaukee areas. The Detroit office will be at 17184 Wyoming, and the Milwaukee quarters at 2755 N. 3rd St.

K-D Lamp Co., Cincinnati, Ohio, opened a new warehouse at 651 N. 17th St., Philadelphia, Pa., to serve Pennsylvania, southern New Jersey, Delaware, Maryland, the District of Columbia and Virginia.

Purolator Products, Inc., Rahway, N. J., has expanded its line with the purchase of Petroleum Accessories, Inc., of Detroit. Facilities will be moved to Ring-

town, Pa., where Petroleum Accessories, Inc., will be operated as a division of Purolator.

Al-Fin division of Fairchild Engine Co. has licensed Rolloy Piston Co., Ltd., of Port Melbourne Australia, to manufacture its bi-metallic pistons, brake drums, sleeve bearings, bushings, timing gears and cylinder barrels.

Raybestos-Manhattan, Inc., has completed the initial unit of its new midwestern plant at Crawfordsville, Ind., which will house its Wabash division. The new plant is equipped to make metal friction elements.

Smith & Mills Co. (machine tool manufacturer) has been acquired from the Hamilton-Thomas Corp. by A. G. Bryant et al. The new S & M offices will be in Chicago.

White Motor Co. has honored 655 employees at an annual "pin banquet" held recently. Total service of the group was over 10,000 years.

Ethyl Corp. reports that vice presidents Joseph A. Costello, B. Bynum Turner, and Sanford M. Wagner have been elected to the board of directors.

Minnesota Mining & Mfg. Co. has set up a new regional sales office and warehouse in Atlanta, Ga.

Trailmobile Canada Ltd. has completed construction and has started manufacturing operations at Scarborough, Ontario.

Perfect Circle Corp., Hagerstown, Ind., has contracted with stockholders to purchase all stock of the Centrifugal Foundry Co., Muskegon, Mich., by March 31, 1952.

Cummins Engine Co., Columbus, Ind., announces that Raymond H. Snyder, former president and treasurer, Snyder Aircraft Div., Air Associates, Chicago, will be the Cummins dealer in that city under the name of Cummins Illinois Engine Sales Inc., 1700 S. Indiana Ave., Chicago.

Lynch Corp. has a new eastern district office at 207 E. 37th St., New York, which will make available a complete line of replacement parts for packaging machines and PAR air compressors.

The Autocar Company, Ardmore, Pa., has moved into its own new building on U. S. Route No. 1 at Duncan Ave., Jersey City, N. J. Under a special arrangement, the Jersey City branch sells and services Reos as well as Autocars. Its previous location was 514 Johnston Ave.

Cummins Diesels are now being sold and serviced in eastern and central Iowa by Cummins Diesel Sales Corp., with headquarters at University and Illinois Sts., Des Moines. The installation will operate as a branch of Cummins Diesel Sales Corp., Omaha. Omaha will continue to serve customers in western Iowa.

The Campbell Chain Company, York, Pa., has announced the appointment of G. J. Kohler as New York State sales representative.

U. S. DEPARTMENT OF COMMERCE
Charles Sawyer, Secretary

BUREAU OF THE CENSUS
Ray V. Pool, Director

FACTS FOR INDUSTRY

SERIES: M31L-00

FOR RELEASE: September 24, 1951

INTERNAL COMBUSTION ENGINES (EXCEPT AUTOMOTIVE AND AIRCRAFT)

WISCONSIN

Air-Cooled-ENGINES

Again Take First Place

Here's proof of Wisconsin Heavy-Duty Air-Cooled Engine preference . . . again based on latest U. S. Bureau of Census statistics.

According to these figures covering ALL carburetor type internal combustion engines, a total of 566,777 engines of 11 to 175 cu. inches displacement were produced and shipped by 41 different manufacturers to other companies during 1950. (This does not include automotive and aircraft engines or so-called "captive" engines built and incorporated into the equipment of the same company.)

Of the total of 566,777, Wisconsin Motor Corporation figures show that 206,737 were produced by this company, or 36.4% of the total in the specified H.P. range. The balance of 63.6% was divided among 40 other engine builders.

These figures are significant because they again offer outstanding proof of preference for Wisconsin Air-Cooled Engines by power equipment builders, distributors, dealers and users of power-operated machines and engines.

Let us put you in touch with your nearest distributor and also supply you with illustrated descriptive data.

4-cycle single Cyl.
models, 3 to 6 hp.

4-cycle single Cyl.
models, 6 to 9 hp.

2-cylinder models
7 to 13 hp.

V-type 4-cylinder
models 15 to 30 hp.

MOST 11 12 H.P.HOURS

WISCONSIN MOTOR CORPORATION

World's Largest Builders of Heavy-Duty Air-Cooled Engines

MILWAUKEE 46, WISCONSIN

WHO SAID ?

"sludge and metal failure just had to exist"

They certainly "found out different" at Harry F. Atkinson & Sons of Philadelphia, as you can tell from the exact words of Charles H. and Joseph B. Atkinson . . .

"We are haulers for the textile trade and have been in business since 1914. We now have a fleet of varied equipment, such as straight jobs and tractor trailers, and in all these years we have tried many oils and had resigned ourselves to the fact that sludge and metal failure just had to exist.

"A few years ago, we changed to your C-800 Heavy Duty Oil, and after a period of time we were really amazed at the results. Sludge is at a minimum and we have increased our oil mileage tremendously. With results like this, we could do nothing else but use C-800 in all our equipment."

As you haulers say, "Safety is No Accident," and here you can see that neither is economy! You're specifically planning economy when you get the proof of the products from Cities Service. Write us or call the nearest office. CITIES SERVICE OIL COMPANY, Dept. C2, Sixty Wall Tower, New York City 5.

CITIES SERVICE



From a Mack to a Dodge,
every Atkinson unit is Cities
Serviced for the sake of the
truck and the business.

HOLLAND

Engineered

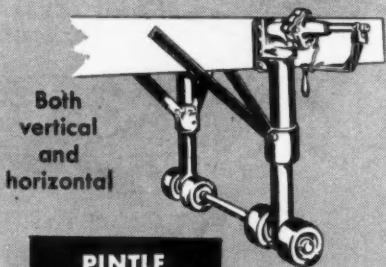
TRUCK-TRAILER EQUIPMENT

**FIFTH
WHEELS**

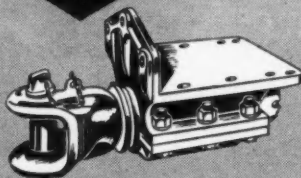


All types of 5th wheels—including the famous Apgar Safety 5th Wheel with the sixth sense.

**LANDING
GEAR**



**PINTLE
HOOKS**



A complete line of pintle hooks, towing rings, king pins and adapters, couplers and towing hooks.

For superior products
achieved through 40
years of leadership
and service,
look to

HOLLAND HITCH

COMPANY
HOLLAND, MICHIGAN

DISTRIBUTORS IN PRINCIPAL CITIES

CCJ News Reports

Continued from Page 112

Rodeo Date Set

The ATA National Truck Rodeo, driving-skill competition will be held at New York City during the week of Oct. 6, according to an announcement made by the American Trucking Associations, Inc. The association's Executive Committee voted to stage the contest in conjunction with ATA's annual convention, scheduled for the Waldorf-Astoria Hotel, New York, October 6-10. Previously, the association had planned to hold the 1952 Rodeo separately from the convention but the committee voted to postpone separation of the two functions until next year.

1951 Registration Complete

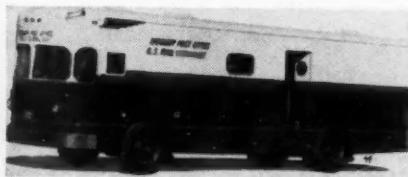
R. L. Polk & Co. figures on truck registrations for 1951 show that 1,003,850 new trucks were licensed last year. December new truck sales, as reflected by registrations, were barely sufficient to send the total for new trucks registered last year just past the million mark. This compares with 1,142,307 new trucks licensed in 1950 and 1,035,174 new trucks licensed in 1948. December new truck totals were only 62,582 units. The greatest number of trucks registered—469,374, or about 46 per cent—were in the 5000 lb. or less gross weight classification.

Connector Mixup

Eagle-eyed readers may have noticed that the standardized ATA connectors illustrated on page 59 of the January issue stole a couple of unauthorized bases. The one on the extreme right is the product of Pollak Corp., Boston, Mass., while the one just over the caption belongs to Joy Mfg. Co., St. Louis.

(TURN TO PAGE 180, PLEASE)

Mobile Post Offices



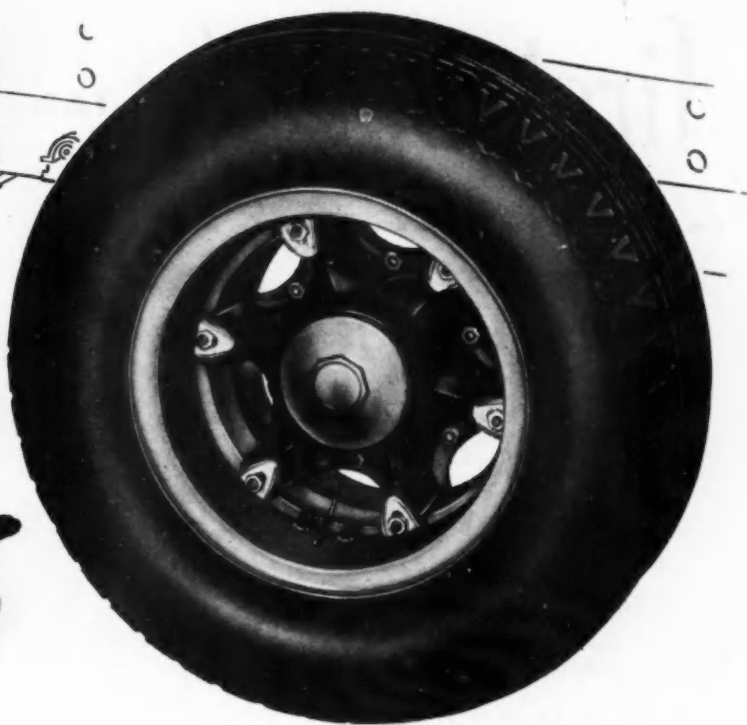
Latest additions to the U. S. Post Office Department's rapidly expanding fleet of highway post offices are three Twin Coach trucks. Designed around standard Twin Coach Super Freighter cargo trucks, these units contain every facility for handling and sorting mail while operating at high road speeds.

DAYTON WHEELS

are distributed through
National Wheel & Rim
Association Members

AKRON, Ohio.....Motor Rim Manufacturers Co.
ALBANY, N. Y.....Wheels Incorporated
ALBUQUERQUE, N. M.....Wheels & Brakes, Inc.
ATLANTA, Ga.....Harris Automotive Service, Inc.
BALTIMORE, Md.....R. W. Norris & Sons
BIRMINGHAM, Ala.....Cruse-Crawford Wheel & Rim Co.
BOSTON, Mass.....Harvey Sales & Service Company
BOSTON, Mass., New England Wheel & Rim Company
BUFFALO, N. Y.....Frey, The Wheelman, Inc.
CALGARY, Alta., Canada.....Fisk Tire Service, Ltd.
CHARLOTTE, N. C., Carolina Rim & Wheel Company
CHICAGO, Ill.....Stons Wheel, Incorporated
CINCINNATI, Ohio.....Rim & Wheel Service, Inc.
CLEVELAND, Ohio.....Motor Rim Manufacturers Co.
COLUMBUS, Ohio.....Hayes Wheel & Spring Service
CUMBERLAND, Md.....R. W. Norris & Sons
DALLAS, Texas.....Southwest Wheel, Incorporated
DAVENPORT, Iowa.....Stone Wheel, Incorporated
DAYTON, Ohio.....Rim & Wheel Service, Inc.
DES MOINES, Iowa.....Des Moines Wheel & Rim Co.
DENVER, Colo.....Quinn & McGill Motor Supply
DETROIT, Mich.....H. & H. Wheel Service, Inc.
DETROIT, Mich.....Rim & Wheel Service Company
DOVER, Del.....R. W. Norris & Sons
EDMONTON, Can.....Alberta Wheel Distributors, Ltd.
FARGO, N. D.....Pioneer Rim & Wheel Company
FARGO, N. D.....Wheel Service Company
FORT WAYNE, Ind.....Wheel & Rim Sales Company
GRAND RAPIDS, Mich.....Rim & Wheel Service Co.
HAGERSTOWN, Md.....R. W. Norris & Sons
HARRISBURG, Pa.....Standard Wheel & Rim Co.
HARRISONBURG, Va., Harrisonburg Wheel & Parts, Inc.
HARTFORD, Conn.....Connecticut Wheel & Rim Co.
HOUSTON, Texas.....Southwest Wheel & Equipment Co.
INDIANAPOLIS, Ind.....Indiana Wheel & Rim Co.
JACKSONVILLE, Fla.....Southeast Wheel & Rim Co.
KANSAS CITY, Mo.....Berbein, Young & Company
KNOXVILLE, Tenn.....Harris Automotive Service, Inc.
LOS ANGELES, Motor Rim & Wheel Service of Calif.
LOUISVILLE, Ky.....Auto Wheel & Rim Service
MEMPHIS, Tenn., Beller Wheel, Brake & Supply Co.
MILWAUKEE, Wis.....Stone Manufacturing Company
MINNEAPOLIS, Minn.....Pioneer Rim & Wheel Co.
MONTREAL, Can., General Automobile Equip., Ltd.
NASHVILLE, Tenn., Beller Wheel, Brake & Supply Co.
NEWARK, N. J.....Wheels Incorporated
NEW HAVEN, Conn., Connecticut Wheel & Rim Co.
NEW ORLEANS, La., Southern Wheel & Rim Service
NEW YORK, N. Y.....Wheels Incorporated
OKLAHOMA CITY, Okla.....Southwest Wheel, Inc.
OMAHA, Nebr.....Morgan Wheel & Equipment Co.
OMAHA, Nebr.....Omaha Rim & Wheel Company
PEORIA, Ill.....Peoria Wheel & Rim Company
PHILADELPHIA, Pa.....Kay Wheel Sales Company
PHILADELPHIA, Pa., Thomas Wheel & Rim Co., Inc.
PITTSBURGH, Pa.....Wheel & Rim Sales Company
PORTLAND, Oregon.....Auto Wheel Service
PORTLAND, Oregon.....Six Robbles, Incorporated
PROVIDENCE, R. I.....New England Wheel & Rim Co.
RALEIGH, N. C.....Carolina Rim & Wheel Company
RICHMOND, Va.....Dixie Wheel & Rim Company
ROCHESTER, N. Y.....Frey, The Wheelman, Inc.
ST. LOUIS, Mo.....Berbein, Young & Company
ST. PAUL, Minn.....Wheel Service Company
SALISBURY, Md.....R. W. Norris & Sons
SALT LAKE CITY, Utah, Henderson Wheel, Rim Serv.
SAN ANTONIO, Texas, Southwest Wheel & Equip. Co.
SAN FRANCISCO, Motor Rim & Wheel Serv. of Calif.
SEATTLE, Wash.....Six Robbles, Incorporated
SOUTH BEND, Ind., Wire & Disc Wheel Sales Co.
SOUTH HILLS, Va.....South Hills Wheel & Parts, Inc.
SPOKANE, Wash., Bearing & Rim Supply Company
SPRINGFIELD, Ill., Illinois Wheel & Brake Company
SPRINGFIELD, Mo.....Berbein, Young & Company
SYRACUSE, N. Y.....Colbourn Wheel & Rim Company
TACOMA, Wash.....Six Robbles, Incorporated
TOLEDO, Ohio.....Wheel & Rim Sales Company
TORONTO, Canada.....Harpham Brothers, Ltd.
TORONTO, Canada, Wheel & Rim Co. of Canada, Ltd.
VANCOUVER, B. C., Canada.....Wheel & Equip., Ltd.
WICHITA, Kansas.....Berbein, Young & Company
WINCHESTER, Va.....R. W. Norris & Sons
WINNIPEG, Can., Automobile Supply Company, Ltd.
WINNIPEG, Canada, Fort Garry Tire & Service, Ltd.
WINSTON-SALEM, N. C., United Automotive Service

Dayton Wheels



DO RUN COOLER!

(and effect weight savings)

The fanning action of the spokes on Dayton Cast Steel Wheels cause them to run *much* cooler.

The spokes create cool air currents, and with the help of the spacer band, direct these currents against brake drums and inner walls of the inside tires.

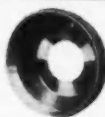
Increased pressure exerted by each of the rim nuts on the clamp bevel against the demountable rim prevents rim slippage and consequent uneven tire wear. Demountable rims also speed tire changing.

Although Dayton Wheels are so strong they never wear out in service, they are very light and in many instances customers have saved considerable weight, where weight counts, by specifying Daytons. They help to lower operating costs. It costs less for service on Daytons than for any other wheel. Smart operators have taken advantage of these savings for many years. In every detail, Dayton Wheels are right for trucks, buses and trailers.

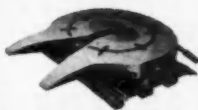
THE DAYTON STEEL FOUNDRY COMPANY, DAYTON 1, OHIO

Dayton Steel Products are serviced by distributor members of the National Wheel and Rim Association.

Dayton SPOKE TYPE CAST STEEL Wheels



DAYTON BRAKE DRUMS
Drums assembled to the wheels at the factory give more perfect concentricity.



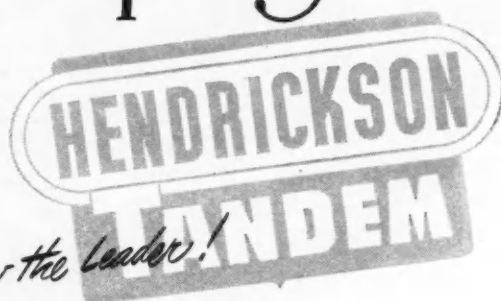
DAYTON 5TH WHEELS
Standard equipment on many trailers. Quick coupling. Positive operation.

DAYTON LANDING GEARS
For heavy duty trailer service.



first Specify TANDEMS

then Specify



This 5760 gallon (propane) twin tank transport unit built by Black, Sivalls & Bryson, at Oklahoma City, Oklahoma, incorporates Hendrickson Model T-322 subframe.



The Hendrickson Tandem has proved time after time that *one basic design is right for all tandem installations.* Specify Hendrickson Tandem!

There is a



designed to do your job best

HENDRICKSON MOTOR TRUCK COMPANY

8001 West 47th Street • Lyons (Chicago Suburb) Illinois

CCJ News Reports

Continued from Page 178

Air Bellows Provides Suspension

A new principle in tandem-suspension developed by The General Tire & Rubber Co., Akron, Ohio, makes use of an air bag or an inflated rubber bellows in place of springs. Operating pressures, automatically controlled, provide for an operating cushion to fit every load and load condition. Improved tire life resulting from road skids is said to be made possible with this installation. Brake torque is better controlled so that hop, chatter or bounce is eliminated during braking operations. Additional information will follow just as soon as the manufacturer is able to provide details.

Michigan Carriers Officers

At a recent meeting of the board of directors of the Michigan Motor Carriers Safety and Personnel Assn. the following officers were elected for 1952: Finley S. Lake, chairman (Interstate Motor Freight System); Elmer R. Reeves, 1st vice-chairman (National Automobile Transporters Assn.); William C. B. Merritt, 2nd vice-chairman (Hector DeTavernier); M. G. Holstine, secretary (Long Transportation Co.).

The following will serve with these officers on the board of directors for this group: C. C. Bingaman, (Refiners Transport & Terminal Corp.); Jerome F. Driscoll (Ralph C. Wilson Agency); W. Earl Givens, Jr. (Geo. F. Alger Co.); William L. Holtz (Associated Truck Lines, Inc.); Guy Mulholland (Detroit Police Department); Wilmont Peckens (W. Ford Johnson Cartage Co.); M. P. Rowe (Hess Cartage Co.).

West Coast Convention Said to be Best Yet

More than 700 delegates, many from outside California, pronounced the Annual California Motor Transport Associations Convention, held at Coronado Beach, Calif., one of the most outstanding trucking conventions ever held in the West. Neil J. Curry, President of the sponsoring association, was responsible for entertainment which included the NBC Symphony Orchestra and an address by Fulton Lewis, Jr., Mutual commentator on national affairs.

On the opening day of the convention, the San Diego Advertising & Sales Club devoted their program to "Motor Transport Day." Mr. Curry took advantage of the opportunity to use the club as a sounding board to tell the trucking

(TURN TO PAGE 182, PLEASE)

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it's powerful.....

it's a HEIN-WERNER!



Powerful! . . . You tell 'em! . . . Every Hein-Werner Hydraulic Jack packs plenty of power.

A man, using only one hand with a Hein-Werner Jack, can easily produce lifting power equal to the combined strength of hundreds of strong men. These jacks are fast . . . easy . . . and safe to operate . . . They're factory-tested at 1½ times their rated capacity . . . You can't beat 'em!

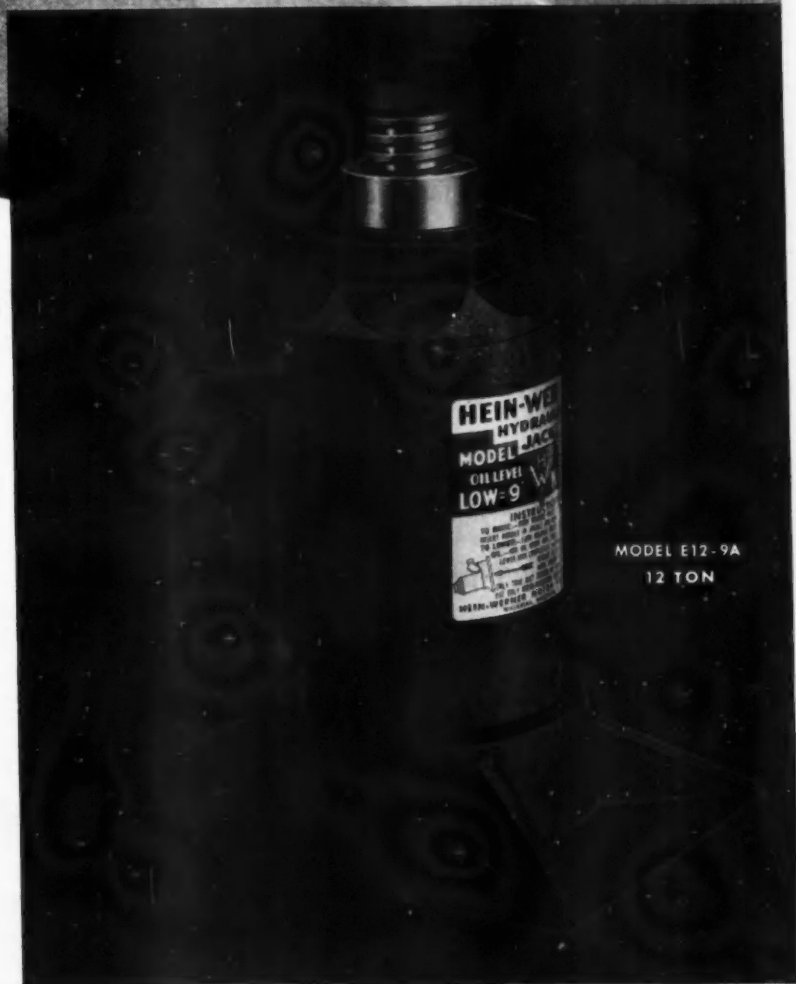
Made in models of 3, 5, 8, 12, 20, 30, 50 and 100-tons capacity.

Hein-Werner

Complete line also includes "Bumper-Lift" Jacks for passenger cars, "Swift-Lift" and Service Jacks for shop use, and "Push and Pull" Hydraulic Jacks for body, fender and frame repair work.

Ask your jobber or write us for details

HEIN-WERNER CORPORATION
WAUKESHA, WISCONSIN



MODEL E12-9A
12 TON

CCJ News Reports

Continued from Page 180

industry's side of the highway story to California radio and newspaper executives.

Walter F. Mullady, President of the American Trucking Associations, called attention to the 53 per cent increase in population in California from 1940 to 1950 in contrast with the 14.3 per cent increase for the country as a whole.

The most popular business session of

the convention was the panel session on the topic "The Shippers View the Motor Carrier Industry" which had four prominent traffic managers giving their constructive criticism. On the same shippers' panel, Milton Hallen, Superintendent of the Walker-Scott Corp., San Diego, suggested that claims under \$10.00 be settled in the field at the time of the inspection and that the inspection form be also used as a claim form in 99 per cent of the cases. A central claim bureau be formed to handle claims on the interline shipments.

As the leading speaker at the mainte-

nance panel discussion, Albert Hetzel, Los Angeles brake specialist, told of the results of an informal survey he had conducted into the factors which cause accidents. He stated that drivers should be constantly aware of the importance of proper brake maintenance, overdriving, physical lag time and mechanical lag time in order to drive safely.

The Truck Owners Association of California elected Thomas R. Dwyer, Delta Lines, San Francisco, chairman of the board for the coming year; Herbert Moore, Morris Drayage Co., Oakland, president; G. H. Crawford, Valley Lines, Fresno, vice president and Robert Minardi, Garden City Transfer Co., San Jose, treasurer.

Cross-Country Service Starts

A three-link, single control, through cross-country motor freight service between the Pacific northwest and the midwest has just been announced jointly by the tri-carrier combination which formed the hookup at a meeting in Omaha, Neb.

The carrier "links" in the trucking chain are West Coast Fast Freight, Northwest Freight Lines, and Watson Bros. Transportation Co. It was revealed that the combination of fleets, totaling more than 3,000 vehicles, is immediately to be thrown into the service.

1951 Tire Shipments Decline

Manufacturers' shipments of The Rubber Manufacturers Assn., Inc. Truck and bus casings during the year amounted to 16,799,654 casings, 10.78 per cent above last year's shipments of 15,164,208 casings, according to a report of the Rubber Manufacturers Assn., Inc. Production increased 25.86 per cent to 17,816,305 casings against the 1950 production of 14,155,842 casings. Inventories increased to 1,796,442 casings from 743,216 casings a year ago.

Shipments of truck and bus casings in December decreased 14.90 per cent to 1,208,197 casings from 1,419,784

(TURN TO PAGE 222, PLEASE)

"Every trade, every profession, has its special publications which are useful in varying degrees in keeping the 'pro' informed in his field.

"Truck fleet operators are fortunate in having available a number of good periodicals, but of these, there is just one that covers the whole field and that can't be dispensed with. **COMMERCIAL CAR JOURNAL** is to us what the **A.M.A. Journal** is to a physician, or **Wall Street Journal** is to a banker or broker."

—The reader who wrote that to us is the Service Manager of a fleet of 95 trucks, located in Colorado.

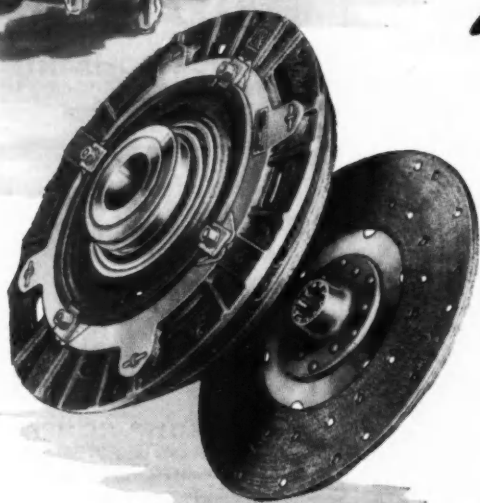
—This gentleman is a good prospective customer for **COMMERCIAL CAR JOURNAL** advertisers.



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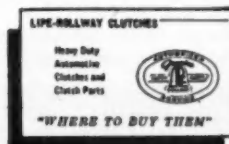
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These days, it's more important than ever to keep "down-time" to a minimum. Your service and repair shop will appreciate copies of our new Clutch Service Manual, and a free, large size wall chart detailing clutch adjustment procedure. Write for free copies.

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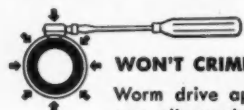
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BREEZE CORPORATIONS, INC.
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CCJ Reports

Continued from Page 182

casings in the previous month. Production declined to 1,543,384 casings from 1,652,383 casings the month before or a decrease of 6.60 per cent. Inventories totaled 1,796,442 casings, an increase of 22.59 per cent from the end of the previous month when 1,465,456 casings were in stock.

Sales to be Conference Subject

The Customer Relations Council of the American Trucking Associations, Inc., will hold its spring meeting April 6-8 at the Shamrock Hotel, Houston, Tex., with sales executives from all parts of the country scheduled to participate.

Floyd C. Day, newly-appointed secretary of the Council, announced that advance registrations for the meeting indicate the attendance total may reach 500, topping that of any previous meeting of the group.

Auto Show Draws 474,000

An unqualified success was the verdict of the public and industry leaders in appraising the 44th annual Chicago Automobile Show which held the spotlight Feb. 16-24 at the International Amphitheatre under Chicago Automobile Trade Association auspices. Attendance totaled 474,000, sharply ahead of the 1951 show attendance of 457,000. One hundred and sixty automobile and 55 truck models were on display.

Chevrolet, Diamond T, Dodge, Ford, GMC, Hendrickson, International Harvester, Studebaker, and Willys, showed cutaway chassis, engines, transmissions, and other units. In addition, one make displayed its five types of engines, another the first 2½-ton diesel (3-cylinder) powered model, and a third the first motor securing National Underwriters approval to use liquid petroleum gas.

(TURN TO PAGE 224, PLEASE)

Chicago Buys Wrecker

A 20-ton wrecker made by Walter Motor Truck Co., New York, was recently purchased by the City of Chicago. The unit has a gvwt of 66,000 lb and will tow loads up to 40,000 lb. It is powered by a 250 hp engine which has a 1197 cu in piston displacement, develops a tractive effort of 3000 lb at 25 mph, and over 30,000 lb at 2½ mph.

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Both "V" TYPE and
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FROM 1½ to 10 TONS

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Aluminum tanks increase payload by nearly 2 tons!

Aluminum tanks on trucks operated by Acme Transportation, Inc., of San Pablo, California, carry 3850 pounds more per trip than steel tanks.

That's 620 gallons extra payload built in by Beall Pipe and Tank Corporation in cooperation with Kaiser Aluminum Development & Engineering Division.

According to Robert J. Hildreth, vice-president of Acme, "In use over all types of terrain in regular operation, this equipment has given perfect service. There has been *no failure nor sign of weakness*. Our confidence is indicated by the fact that we have two additional aluminum transports now under construction."

Not only do aluminum tanks turn dead-weight into profit for Acme, but substantial savings in *lower maintenance and operating costs* are made.

On empty runs, aluminum's light weight cuts fuel consumption, reduces wear on engine and tires. And since aluminum is *highly resistant to corrosion*, Acme finds aluminum tanks ideal for the transportation of aviation gasoline. Rust cannot form, so there is no danger of contamination, so often found in steel tanks. Although it hauls aviation gasoline exclusively, Acme's unit never has had a turn-down at the loading dock!

Kaiser Aluminum's Development and Engineering Division is available to help you overcome design, fabrication or payload problems through the use of light, strong, versatile Kaiser Aluminum. Call any office for complete information and for current availability. 65 Kaiser Aluminum offices and warehouse distributors in principal cities. Kaiser Aluminum & Chemical Sales, Inc., Oakland 12, California.

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Setting the pace—through quality and service

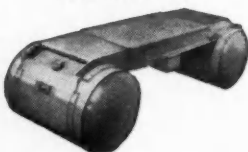


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SNYDER SAFETY TANKS

All three Snyder Safety Tanks pictured here embody all the safety features that assure the utmost safety for the fleet operator, driver and cargo. Snyder "Balanced Construction" design, insures lighter weight, streamlined yet stronger tanks...

Tanks built to stand heavy loads, high speeds and the shock of the road. The Snyder safety diesel tank has all the safety and construction features of the gasoline tank and is equipped with larger outlets to accommodate the heavier fuel lines.

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AUTOMOTIVE AND AIRCRAFT DIVISION
AMERICAN CHAIN & CABLE

In Business for Your Safety

CCJ Reports

Continued from Page 222

Among new products in the accessory section were a refrigerated air-conditioning system, a green-amber-red light setup attached to the rear windows, inflated bumper guards, a visual-audible device to warn pedestrians that a motor vehicle was approaching the street from inside a building, and a single pedal serving as both accelerator and brake. A trucking company displayed various small models of vehicles in motion and a two-way truck-to-headquarters radio communication hookup.

Transport Trades Council Awards

Awards to the trucking industry were made at the opening ceremonies of the second annual National Transport Vehicle Show and Fleet Maintenance Exposition in New York, February 26, 27, and 28.

To C. Eugene Johnson, executive vice president, Pacific Intermountain Express Co., Oakland, Cal., a distinguished service award "In recognition of his contribution to advanced design and use of transport vehicle equipment and freight devices as well as the development of systems for the improved operation of a large trucking company."

To Malcom P. McLean, Jr., President, McLean Trucking Co., Winston-Salem, N. C., a distinguished service award "In recognition of his leadership in progressive fleet modernization, establishment of advanced safety program and fostering of better cost control and cost analysis systems."

To Hugh E. Sheridan, president, Sheridan and Duncan, New York City, a distinguished service award "In recognition of his major contributions to the betterment of labor relations in the

(TURN TO PAGE 226, PLEASE)

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GUARANTEED SERVICE

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REAR WHEEL STUDS for all Trucks

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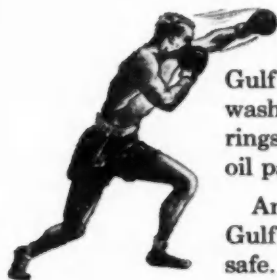


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Give dirty engines the **New 1-2!**

1. Clean 'em out with Gulf Motor Flush!



Gulf Motor Flush is powerful! It quickly dissolves and washes away sludge, varnish and lacquer deposits from rings . . . valve stems . . . oil lines . . . screens . . . and oil pans.

And here's something: *no dismantling necessary.* Gulf Motor Flush is absolutely *non-corrosive*, too. And safe. Use it to get more miles out of rings . . . keep repair bills down.

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Gulflube Motor Oil X.H.D. is something new . . . something great! It's specially compounded to keep engines *clean* as it lubricates. Prevents the formation of sludge and varnish . . . prevents rust.

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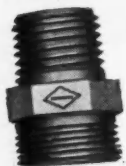
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Title Address

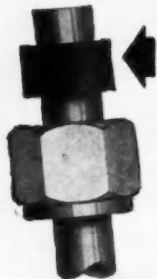
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Wohlert Corporation
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CCJ Reports

Continued from Page 224

trucking industry within the New York metropolitan area."

To Gail H. Crawford, president and general manager, United Motor Transport Lines Inc., Fresno, Cal., a distinguished service award "In recognition of his contribution toward the hopes and aspirations of Young America as exemplified by his rise from billing clerk to president in fifteen years."

Sponsored by the Public Relations Committee of the Automotive Transport Trades Council, these awards will be an annual feature of the National Transport Vehicle Show.

Light Cargo Moves by Air

Reports sifting into Washington would indicate that more cargo in the lighter parcel type is moving into air transport. Possible reasons are (a) new parcel post size and weight restrictions, (b) increased merchandising effort on the part of airlines, and (c) increasing rail and Railway Express Agency rates.

It is too soon to determine if this is a definite trend commercially. But the military services are preparing to move more small shipments by air. Delivery has already started, for instance, on an initial order for 97 helicopters for use on short hauls by the newly organized Helicopter Transport Companies of the Transportation Corps. Each copter can handle up to one ton of freight.

Plaudits for LOOK

Congratulations to LOOK magazine for its article "Why Motorists Blow Their Tops" in the February 26 issue. Focusing attention on the nation's 52,000,000 vehicles operating on a highway system that is getting worse before it can hope to get better, the article states "our highway system, in its present form, was just about completed by the time the Model A Ford appeared. Or, to put it another way, we've been driving for the last 25 years on Model T roads."

While the article mentions the total of 9,000,000 trucks, it in no way blames them for the highway bottleneck. In fact, there is a sub-head which says, "Trucks Pay Heaviest Tolls."

Let us hope that future articles—there is a note that more will follow—will stick to the important theme, already established, that there is nothing wrong with highways but highways themselves. Let us hope they will not become the easy prey for prejudicial influences.

END

Please Resume Reading Page 37




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TIRE CHAINS
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